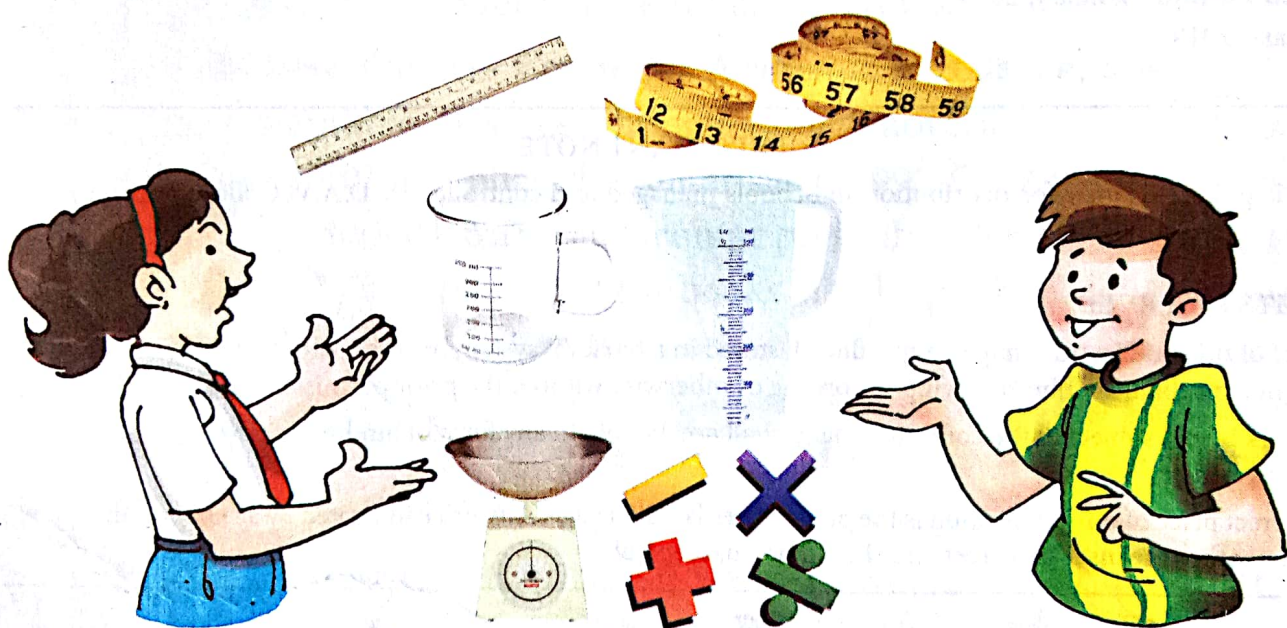


Primary

MATHEMATICS

(Class-IV)



Publication Division

D.A.V. College Managing Committee

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NUMBERS UP TO 9 99 999

Do you remember what is

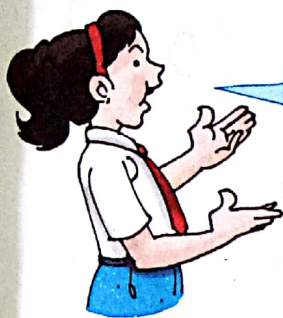
- 1 more than 9?
- 1 more than 99?
- 1 more than 999?



Yes, I know

- 1 more than 9 is 10
- 1 more than 99 is 100
- 1 more than 999 is 1000

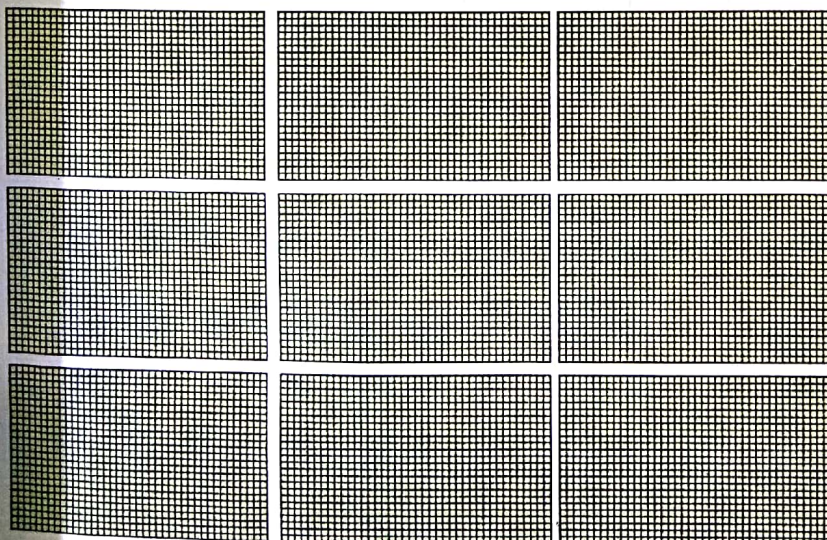
$$\begin{aligned} 9 + 1 &= 10 \\ 99 + 1 &= 100 \\ 999 + 1 &= 1000 \end{aligned}$$



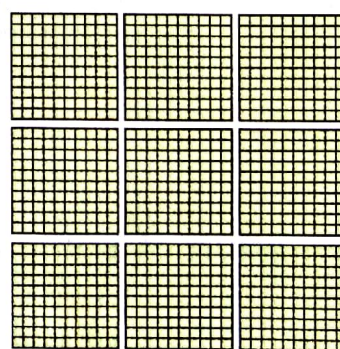
NUMBER ONE MORE THAN 9999

If we have 9999 blocks

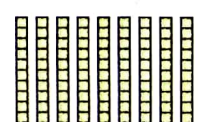
(9000)



(900)



(90)



(9)



and we add 1 more block , we get 10000 blocks.

$$9999 + 1 = 10000$$

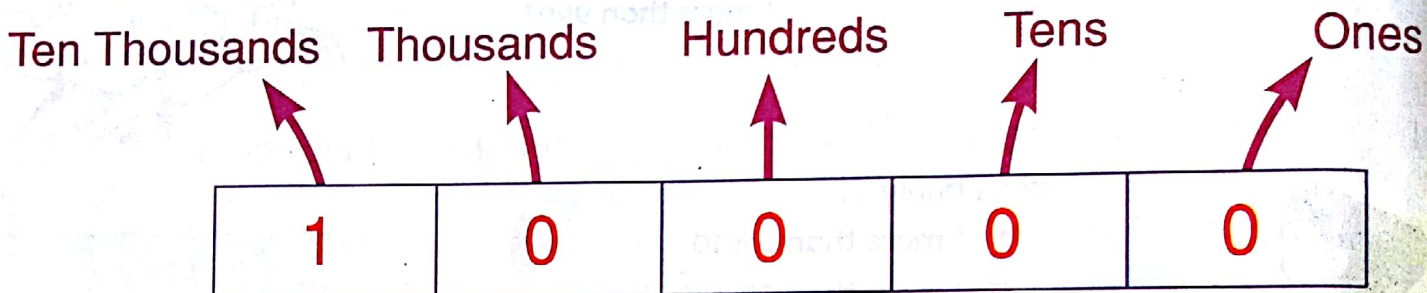
We read **10000** as **Ten Thousand**.

There are **five digits** in ten thousand.

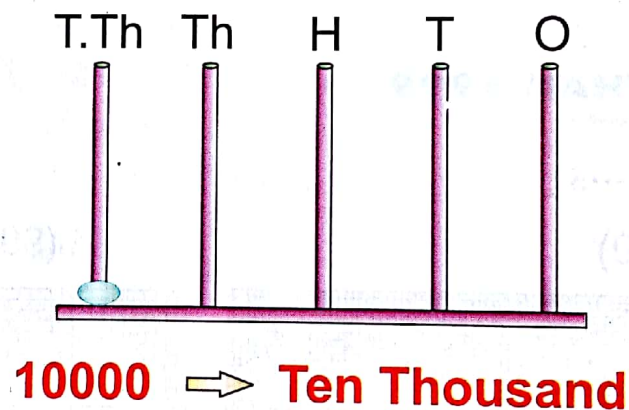
So,

- 9999 is the greatest 4-digit number.
- 10000 is the smallest 5-digit number.

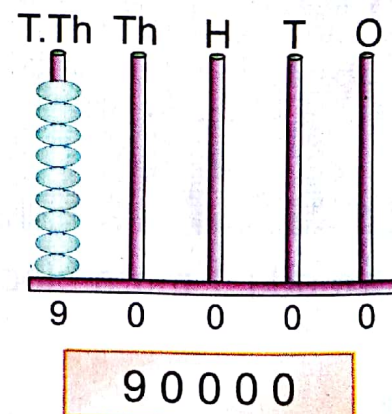
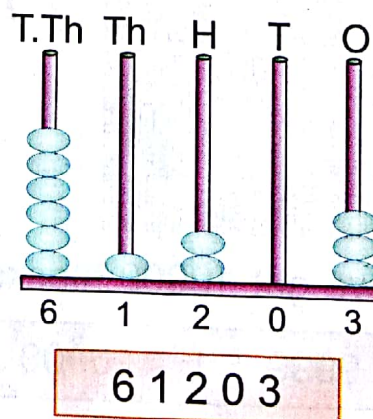
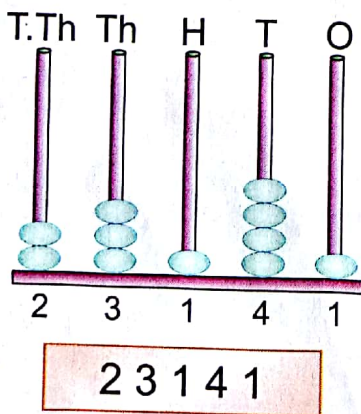
The five places of a 5-digit number are—
ONES, TENS, HUNDREDS, THOUSANDS, TEN THOUSANDS



On the abacus, 10000 is shown like this—

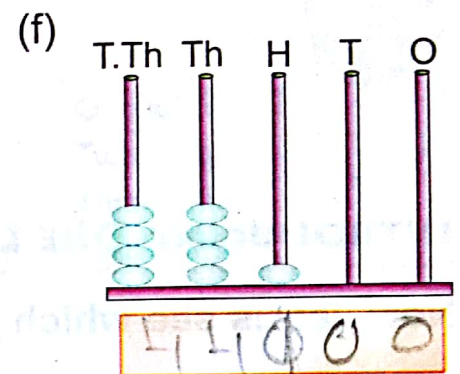
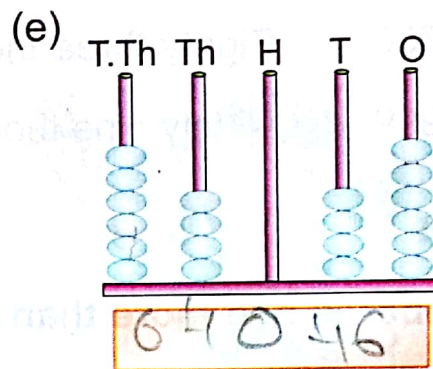
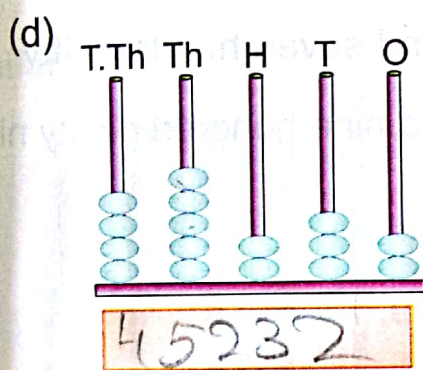
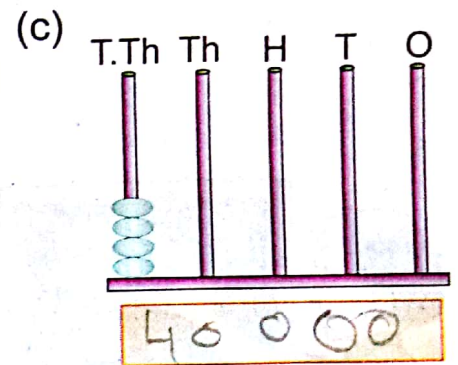
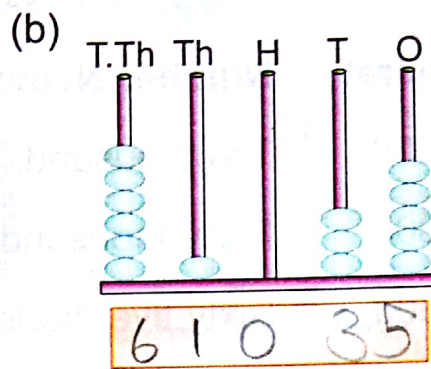
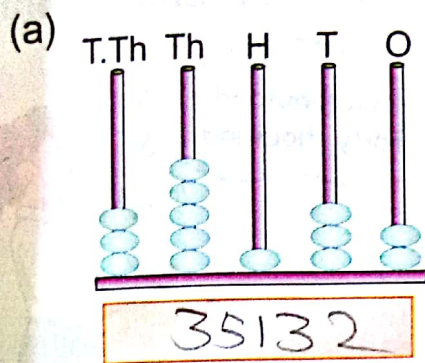


See the representation of some 5-digit numbers on the abacus.

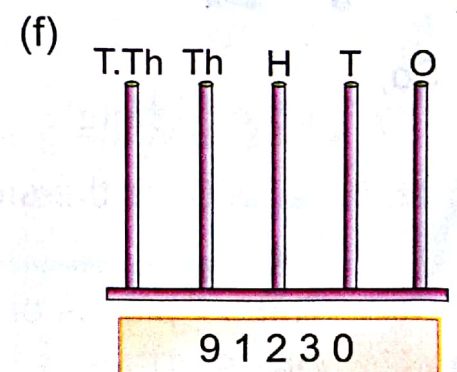
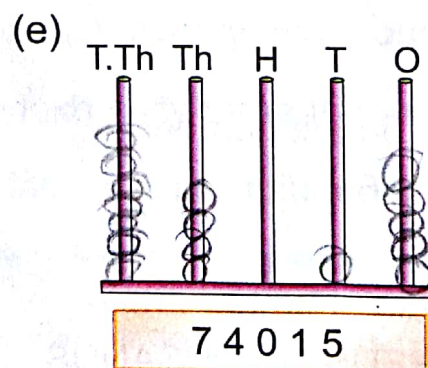
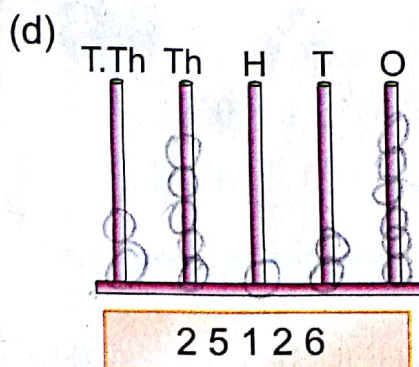
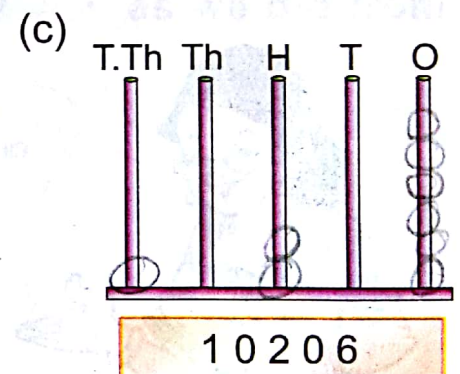
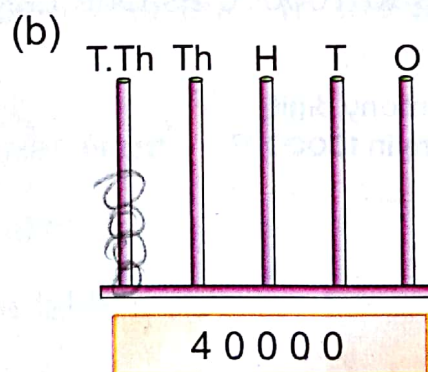
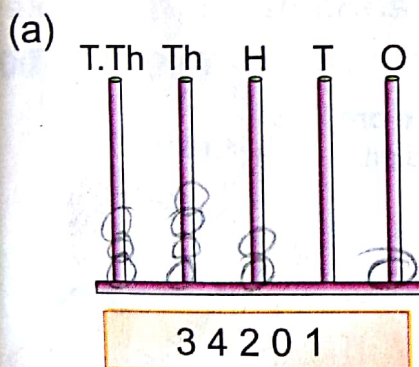


Worksheet 1

1. Write the numbers represented on the following abacus.



2. Represent the following numbers on the abacus.



Let us read the numerals beyond 10000.

I write

I read

N numeral

Number Name

10000

Ten thousand.

40000

Forty thousand.

65000

Sixty five thousand.

72500

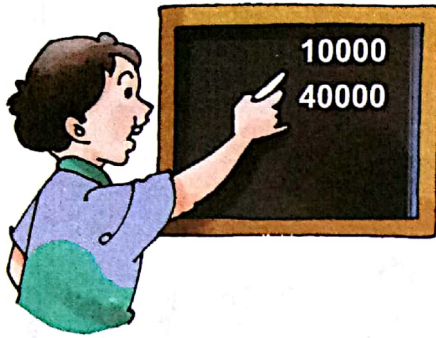
Seventy two thousand five hundred.

83750

Eighty three thousand seven hundred fifty.

99999

Ninety nine thousand nine hundred ninety nine.



Ten thousand
Forty thousand



INTRODUCING ONE LAKH

Now, let us see which number is one more than 99999.

$$99999 + 1 = 100000$$

We read 100000 as One Lakh.



How many digits
are there in 100000?

There are
Six digits.



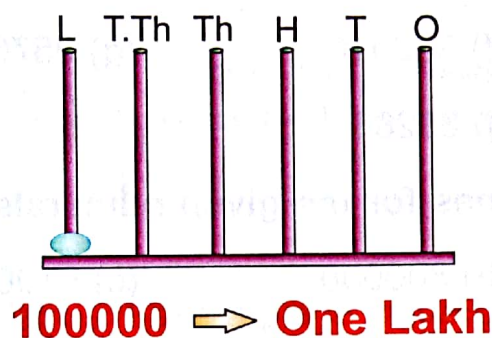
So,

- 99999 is the greatest 5-digit number
- 100000 is the smallest 6-digit number.

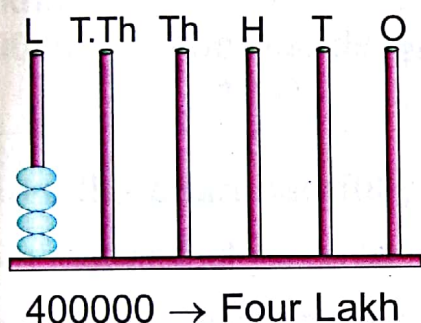
The six places of a 6-digit number are—
ONES, TENS, HUNDREDS, THOUSANDS, TEN THOUSANDS, LAKHS.

1 lakh = 10 times ten thousand

On the abacus, 100000 is shown like this—



Similarly,



One lakh,
Two lakh,
Three lakh,
Four lakh

We extend the numerals beyond one lakh in the same way as we did from 10000 to 99999.

Numeral	Number Name
100000	One lakh.
300000	Three lakh.
510000	Five lakh ten thousand.
725000	Seven lakh twenty five thousand.
863260	Eight lakh sixty three thousand two hundred sixty.
999999	Nine lakh ninety nine thousand nine hundred ninety nine.

Remember

100000 is the smallest 6-digit number and 999999 is the greatest 6-digit number.

Worksheet 2

1. Read loudly the following numerals.

- | | | | |
|------------|------------|------------|------------|
| (a) 20000 | (b) 33108 | (c) 960002 | (d) 77010 |
| (e) 700000 | (f) 382910 | (g) 95766 | (h) 810000 |
| (i) 943256 | (j) 88288 | | |

2. Write the number names for the given numerals.

- | | | | |
|------------|------------|------------|------------|
| (a) 25002 | (b) 800000 | (c) 51008 | (d) 521381 |
| (e) 900009 | (f) 11000 | (g) 111100 | (h) 625000 |
| (i) 43021 | (j) 52611 | | |

3. Write the numerals for the given number names.

- (a) Fifteen thousand four hundred sixty five.
- (b) Nineteen thousand three hundred fourteen.
- (c) Five lakh.
- (d) Forty seven thousand two.
- (e) Three lakh fifteen thousand three hundred.
- (f) One lakh eleven thousand one hundred eleven.
- (g) Fifty thousand five.
- (h) Eight lakh fourteen thousand three.
- (i) Seven lakh seven thousand seven.
- (j) Nine lakh nine thousand.

4. Name the six places of a 6-digit number.

5. Write down the greatest number of 5-digits and the smallest number of 6-digits. How much is the difference between the two?

PLACE VALUE CHART



What are the six places of a 6-digit number?

Ones, Tens, Hundreds, Thousands, Ten Thousands and Lakhs.



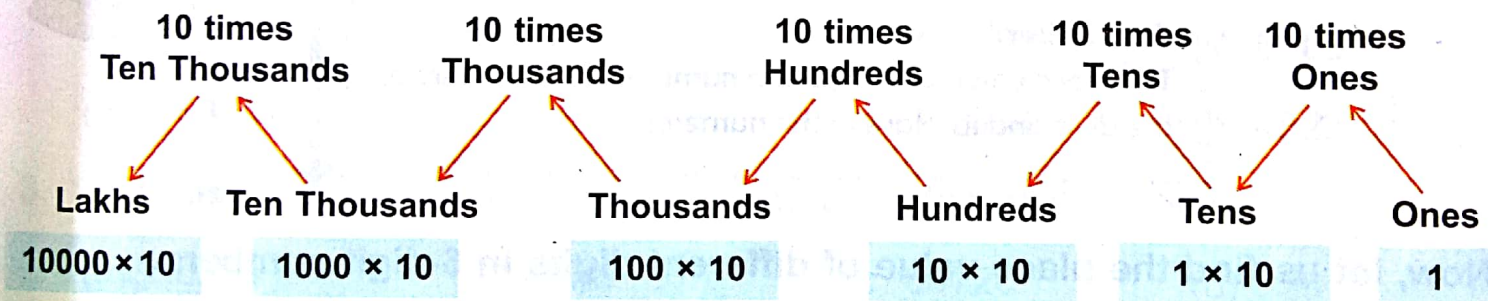
Keeping the places in mind, let us make a place value chart of a 6-digit number.

PLACE VALUE CHART

Lakhs 100000	Ten Thousands 10000	Thousands 1000	Hundreds 100	Tens 10	Ones 1
-----------------	---------------------------	-------------------	-----------------	------------	-----------

Observe the chart carefully. See that:

- the smallest place (ones) is on the extreme right.
- each place on the left has a value 10 times more than the value of the place on the right side.



Now, let us enter numerals, 8436, 49018, 643821 in the place value chart.

	Lakhs 100000	Ten Thousands 10000	Thousands 1000	Hundreds 100	Tens 10	Ones 1
L T.Th Th H T O						
8 4 3 6 →			8	4	3	6
4 9 0 1 8 →		4	9	0	1	8
6 4 3 8 2 1 →	6	4	3	8	2	1

Worksheet 3

1. Given below are some numerals. Draw a neat place value chart and enter these numerals in it.

(a) 84621

(b) 493

(c) 832401

(d) 7777

(e) 100000

(f) 50009

(g) 623981

(h) 9987

(i) 46201

(j) 867430

PLACE VALUE



Do you remember the place value of:

3 in 43
8 in 84
7 in 780
2 in 2835

The place value of:

3 in 43 is 3 or 3 ones
8 in 84 is 80 or 8 tens
7 in 780 is 700 or 7 hundreds
2 in 2835 is 2000 or 2 thousands



Remember

The place value of a digit in a numeral is the product of the digit and its place in the numeral.

Now, let us find the place value of different digits in 6-digit numbers.

L	T.Th	Th	H	T	O
2	3	5	7	8	2

→ The place of digit 7 is hundreds.
So the place value of 7 is 7×100 or 7 hundreds.

L	T.Th	Th	H	T	O
6	3	5	0	9	2

→ The place of digit 5 is thousands.
So the place value of 5 is 5×1000 or 5 thousands.

L	T.Th	Th	H	T	O
1	2	0	5	9	4

→ The place of digit 2 is ten thousands.
So the place value of 2 is 2×10000 or 2 ten thousands or twenty thousand.

L	T.Th	Th	H	T	O
4	7	8	2	1	3



The place of digit 4 is lakhs.

So the place value of 4 is 4×100000 or 4 lakhs.

Worksheet 4

1. Look at the place value chart given below and write the place value of the encircled digits.

	Lakhs (100000)	Ten Thousands (10000)	Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)
(a)		2	9	0	5	6
(b)	7	4	0	3	1	3
(c)			5	8	3	2
(d)	9	9	8	3	2	6
(e)		6	0	5	4	9

2. Write down the place value of the digit in bold.

- (a) 3491 (b) 80109 (c) 321893 (d) 6505
 (e) 76321 (f) 19568 (g) 235740 (h) 4923

3. Underline the numeral in which the place value of 8 is 80000.

- (a) 38291 (b) 4328 (c) 84720 (d) 829

4. Underline the numeral in which the place value of 2 is 200.

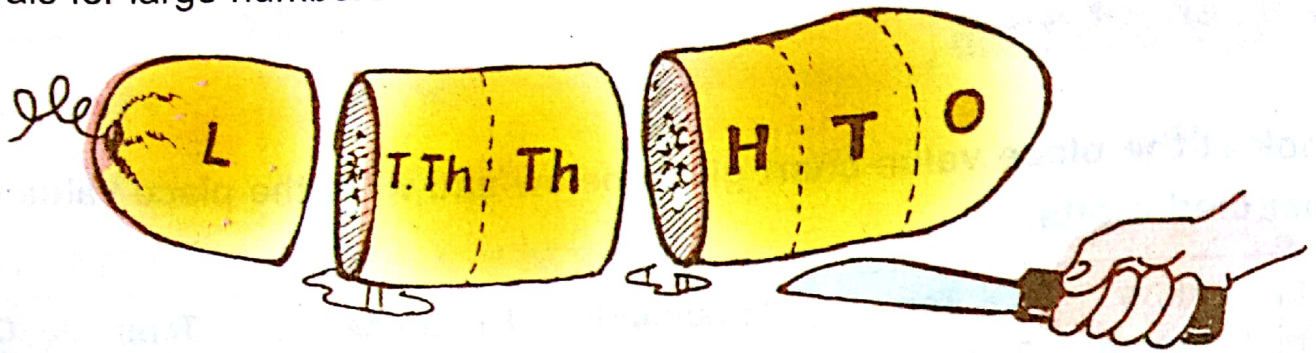
- (a) 253410 (b) 48295 (c) 72843 (d) 45782

5. Compare the place values of the encircled digits in—

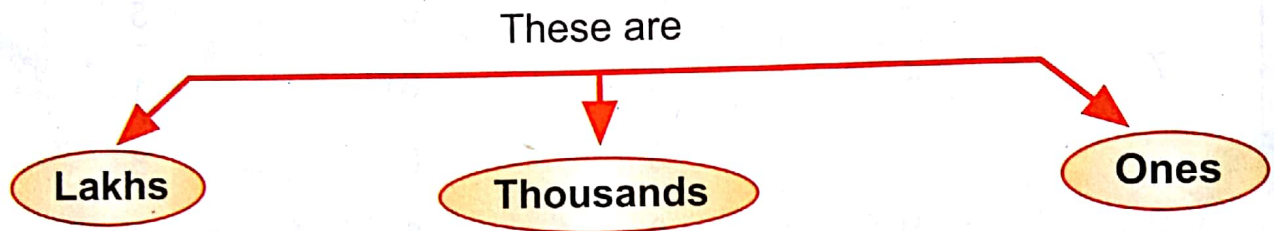
7 4 6 2 7 3

PERIOD

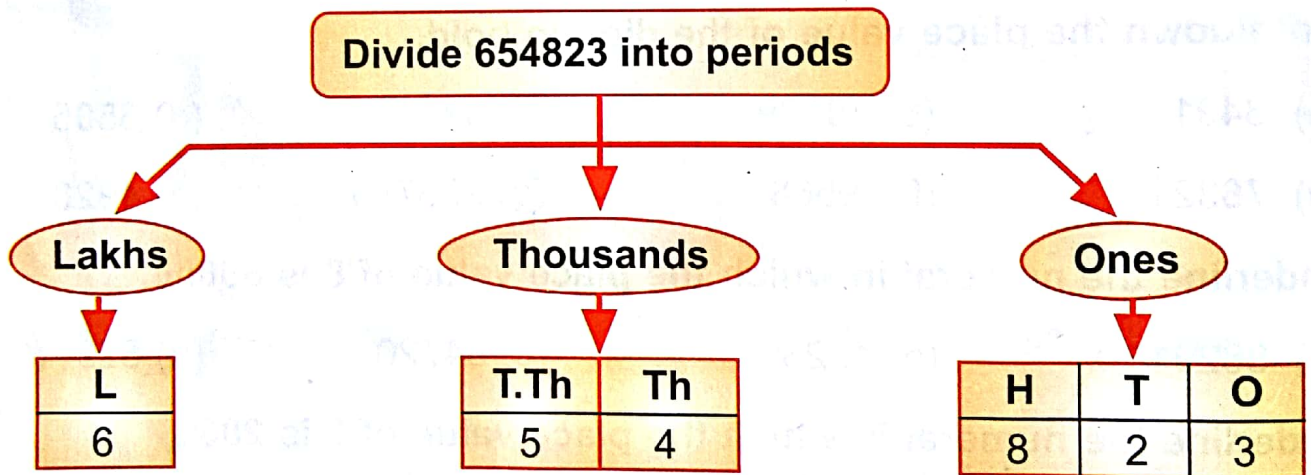
As the size of a number increases, we find it difficult to read the number. So, to read numerals for large numbers without any difficulty, we group the places into **periods**.



The six places are grouped into three **PERIODS**.



Now, let us observe the places of each period.



- The first three places from the right that are **Ones**, **Tens** and **Hundreds** make the **ONES** period.
- The next two places that are **Thousands** and **Ten Thousands** make the **THOUSANDS** period.
- The sixth place comes in the **LAKHS** period.

We read 6 54 823 as **six lakh fifty four thousand eight hundred twenty three**.

Remember

- While reading the numerals of a number, all the digits in the same period are read together, and the name of the period (except the ones) is read along with them.
- In order to separate the periods, we leave a little space or insert commas in between the periods, e.g. 643926 is written as 6 43 926 or 6,43,926.

The following place value chart clearly shows the periods and places of each digit of a numeral.

PLACE VALUE CHART

PERIOD →	LAKHS	THOUSANDS		ONES		
PLACE →	Lakhs (100000)	Ten Thousands (10000)	Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)

- What is the period and place of 1 in 3,48,016?

Period

Ones

Place

Tens

- What is the period and place of 3 in 9,23,108?

Period

Thousands

Place

Thousands

Answer these questions.

1. What is the period and place of 8 in 3,48,016?

Period

Place

2. What is the period and place of 9 in 9,23,108?

Period

Place

Worksheet 5

1. Name the three periods into which a 6-digit number is grouped.

2. Mention the places in Ones and Thousands periods.

3. Rewrite the following numerals using commas between periods.

(a) 91409

(b) 113625

(c) 824300

(d) 98461

(e) 310008

(f) 444444

(g) 100000

(h) 505001,7

4. Write the period, place and place value of the encircled digit in each number.

(a) ③, 4 1, 9 6 8

(b) 2 6, 0 4 ⑧

(c) 7, 0 8, ④ 3 2

(d) 8, 0 ①, 4 3 2

(e) 3 0, 0 ④ 9

(f) 6, 6 ⑥, 6 6 6

(g) 8, 0 1, 0 2 ③

(h) ④, 3 8, 6 2 0

5. Write the numerals using commas between periods.

(a) Sixty two thousand three hundred.

(b) Thirty thousand one.

(c) Two lakh one thousand three.

(d) Six lakh twenty nine thousand sixty.

(e) Fifty thousand fifty.

(f) Nine lakh nineteen thousand nineteen.

(g) Fourteen thousand thirty one.

(h) Eight lakh one thousand three hundred one.

6. Write the number names for the following numerals.

(a) 75,831

(b) 3,65,186

(c) 1,00,301

(d) 95,000

(e) 3,08,751

(f) 7,07,707

(g) 6,60,660

(h) 40,004

EXPANDED FORM

Do you remember the expanded form of 3498?

3498



3 thousands + 4 hundreds + 9 tens + 8 ones

In the same way, let us write a 6-digit number in expanded form.

9,75,218

$9 \times 1,00,000 + 7 \times 10,000 + 5 \times 1,000 + 2 \times 100 + 1 \times 10 + 8 \times 1$

9 lakhs + 7 ten thousands + 5 thousands + 2 hundreds + 1 ten + 8 ones

$9,00,000 + 70,000 + 5,000 + 200 + 10 + 8$

As shown above, the expanded form can be written in three different ways.

Remember

Expanded form of a numeral is the sum of the place values of each digit of the numeral.

Given the expanded form of a number, we can also write the numeral in standard form.

Expanded form

Standard form

(a) $\underline{2}00 + \underline{7}0 + \underline{5}$

= $\boxed{275}$

(b) $\underline{8},000 + \underline{5}00 + \underline{2}0 + \underline{1}$

= $\boxed{8,521}$

(c) $\underline{7} \times 10,000 + \underline{0} \times 1,000 + \underline{5} \times 100 + \underline{2} \times 10 + \underline{1} \times 1$

= $\boxed{70,521}$

(d) $\underline{3}$ lakhs + $\underline{6}$ ten thousands + $\underline{5}$ thousands
+ $\underline{0}$ hundred + $\underline{3}$ tens + $\underline{2}$ ones

= $\boxed{3,65,032}$

(e) $\underline{4} \times 1,00,000 + \underline{8} \times 10,000 + \underline{6} \times 1,000 +$
 $\underline{1} \times 100 + \underline{4} \times 10 + \underline{3} \times 1$

= $\boxed{4,86,143}$

Worksheet 6

1. Fill in the blanks.

- (a) 75,162 = $\boxed{7}$ ten thousands + $\boxed{5}$ thousands + $\boxed{1}$ hundred + $\boxed{6}$ tens + $\boxed{2}$ ones.
- (b) 31,927 = $\boxed{3} \times 10,000 + \boxed{1} \times 1,000 + \boxed{9} \times 100 + \boxed{2} \times 10 + \boxed{7} \times 1$
- (c) 4,86,293 = $\boxed{4}$ lakhs + $\boxed{8}$ ten thousands + $\boxed{6}$ thousands + $\boxed{2}$ hundreds + $\boxed{9}$ tens + $\boxed{3}$ ones.
- (d) 3,01,783 = $\boxed{300000} + 0 + \boxed{1000} + 700 + \boxed{80} + 3$
- (e) 50,908 = $50,000 + \boxed{900} + \boxed{8}$

2. Write the following numerals in expanded form in three different ways.

- (a) 91,409 (b) 1,13,625 (c) 8,24,307 (d) 98,461
- (e) 3,10,008 (f) 4,44,444 (g) 8,00,134 (h) 9,00,009

3. Write the standard numerals. The first one is done for you.

- (a) $6,00,000 + 50,000 + 4,000 + 300 + 10 + 1$ = $\boxed{6,54,311}$
- (b) $60,000 + 8,000 + 600 + 50 + 4$ = $\boxed{68654}$
- (c) $1,00,000 + 10,000 + 1,000 + 100 + 10 + 1$ = $\boxed{1,11,111}$
- (d) $90,000 + 0 + 700 + 0 + 5$ = $\boxed{90705}$
- (e) $6,00,000 + 0 + 5,000 + 400 + 10 + 0$ = $\boxed{605410}$
- (f) $4,00,000 + 30,000 + 0 + 0 + 20 + 7$ = $\boxed{430027}$
- (g) $80,000 + 300 + 8$ = $\boxed{80308}$
- (h) $7,00,000 + 10,000 + 6$ = $\boxed{710006}$

ORDERING OF NUMBERS

Do you remember how we compared the 4-digit numbers?

$$7,432 > 6,581$$

$$3,852 < 3,941$$

$$5,398 > 5,328$$

$$7,259 = 7,259$$

Remember

First compare digits in thousands place, then the digits in hundreds and tens place, and lastly the digits in ones place.

In the same way, we can compare 5-digit and 6-digit numbers.

Worksheet 7

1. Compare the following pairs of numerals (" $<$ ", " $>$ ", " $=$ ").

(a) 36,491 78,491

(b) 98,397 9,83,976

(c) 99,909 99,990

(d) 86,253 86,254

(e) 1,16,430 1,16,430

(f) 84,001 84,010

(g) 7,53,829 7,53,289

(h) 4,00,414 4,00,441

(i) 63,800 6,380

(j) 33,313 36,313

2. Encircle the greatest numeral from each set of numerals given below.

(a) 68,349; 68,943; 6,839; 16,349

(b) 11,001; 1,10,001; 10,001; 1,100

(c) 9,43,826; 9,43,286; 9,43,962; 9,43,268

3. Rewrite each set of numerals in ascending order.

(a) 50,050; 50,500; 55,000; 5,005

(b) 71,309; 17,309; 71,903; 17,903

(c) 4,38,654; 43,865; 4,83,654; 4,38,546

(d) 2,20,222; 20,002; 22,020; 2,02,202

4. Rewrite each set of numerals in descending order.

(a) 10,001; 11,001; 1,110; 11,100

(b) 83,456; 38,456; 83,648; 83,458

(c) 3,49,990; 34,990; 3,94,090; 34,909

(d) 7,70,777; 70,070; 70,707; 7,07,077

Brain Teasers

1. Tick (✓) the correct answer.

- (a) The greatest 6-digit number formed by using the digits 7, 3, 1, 0, 9 and is—
(i) 974301 (ii) ☒ 974310 (iii) 974103 (iv) 973410
- (b) The period of the digit _____ in 6,54,321 is Lakhs.
(i) 5 (ii) 3 (iii) 4 (iv) ☒ 6
- (c) The smallest 6-digit number is—
(i) 1,11,111 (ii) 1,00,001 (iii) 1,10,010 (iv) ☒ 1,00,000
- (d) The sum of the place value of 9 and 7 in the number 947635 is—
(i) 970000 (ii) ☒ 907000 (iii) 101000 (iv) 900700
- (e) $8 \times 1,00,000 + 5 \times 10,000 + 6 \times 1,000 + 9 \times 100 + 0 + 5$ is equal to—
(i) 856095 (ii) ☒ 856905 (iii) 850695 (iv) 865905

2. Write the three periods of a 6-digit numeral. Also mention the corresponding places of each period.

3. You are given the following numerals. Pick out the greatest numeral and the smallest numeral from the set.

950	5,309	9,439	78,799	29,509	509
1,101	8,400	99,905	80,310	10,001	99,950

4. Fill in the blanks.

(a) The smallest 5-digit numeral is

(b) (i) 1 lakh = thousands.

(ii) hundred = 10 tens.

(c) The numeral just before 90,000 is

(d) The places, thousands and ten thousands, belong to the period.

(e) Compare by using ">", "<" or "=" in the box.

(i) 11,111 1,111

(ii) 9,87,091 9,78,091

5. Write down the numeral which is one more than the greatest 5-digit numeral.

6. Which numeral has more digits—greatest 5-digit numeral or smallest 6-digit numeral?

7. Write the standard numeral for:

(a) $5,000 + 20 + 3$

(b) $600 + 70 + 15$

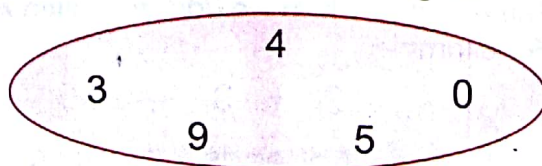
(c) $70,000 + 7 + 700 + 70$

8. Write down the period and place of the underlined digit in each numeral.

Numeral	Period	Place
(a) 92, <u>9</u> 58		
(b) 87, <u>2</u> 15		
(c) <u>6</u> 3,049		
(d) <u>1</u> ,00,000		
(e) 53,2 <u>6</u> 9		

9. Compare the place values of the encircled digits in the numeral 43032.

10. You are given some digits below. Form the greatest and the smallest 5-digit numeral using each one of these digits only once.



Do you remember addition and subtraction?



Let us solve some problems.

1. Add.

(a) 5,310 and 740

(c) 2,135; 4,531 and 1,321

(e) 52; 753 and 8,303

(b) 1,352; 531 and 296

(d) 2,132; 47 and 501

(f) 7,132; 60 and 205

2. Subtract.

(a) 4,573 from 9,013

(c) 4,575 from 6,027

(e) 457 from 3,600

(b) 2,518 from 8,746

(d) 2,538 from 7,537

(f) 2,753 from 4,532

Let us discuss more about Addition first.



Do you know?

The numbers which we add are called **Addends**.
For example:

$$\begin{array}{c} 2 + 3 = 5 \\ \text{Addends} \quad \text{Sum} \end{array}$$

ADDITION (5-DIGIT NUMBERS AND 6-DIGIT NUMBERS)

Example 1:

	T.Th	Th	H	T	O
	2	1	3	4	2
+	1	0	2	3	7

As usual

- * first we add ones,
- * then tens,
- * then hundreds,
- * then thousands,
- * and at the end ten thousands.

So, after adding, we have:

	T.Th	Th	H	T	O
	2	1	3	4	2
+	1	0	2	3	7
	3	0	5	7	9

Adding ones

Adding tens

Adding hundreds

Adding thousands

Adding ten thousands

(2 ten thousands + 1 ten thousands
= 3 ten thousands)



Example 2:

Add 23,935; 53,441 and 21,253

	T.Th	Th	H	T	O
	2	3	9	3	5
	5	3	4	4	1
+	2	1	2	5	3
	9	8	6	2	9

Carry overs

Adding ones

Adding tens

Adding hundreds

Adding thousands

Adding ten thousands (2 ten thousands +
5 ten thousands + 2 ten thousands = 9 ten thousands)

First of all, let us arrange
the addends in the
column form.



Thus, the sum of 23,935; 53,441 and 21,253 is 98,629.

Example 3:

Add 4,37,816; 2,29,318 and 3,21,359

	L	T.Th	Th	H	T	O
		1	1		2	
	4	3	7	8	1	6
+	2	2	9	3	1	8
+	3	2	1	3	5	9
	9	8	8	4	9	3

Carry overs

Adding ones
Adding tens
Adding hundreds
Adding thousands
Adding ten thousands
Adding lakhs
(4 lakhs + 2 lakhs + 3 lakhs = 9 lakhs)
(1 ten thousands + 3 ten thousands + 2 ten thousands = 8 ten thousands)

Remember

As usual, we start adding from ones, and add lakhs at the end.

Thus, the sum of 4,37,816; 2,29,318 and 3,21,359 is 9,88,493.

Worksheet 1

1. Add.

	T.Th	Th	H	T	O
(a)	1	2	1	4	2
+	5	3	8	0	7

	T.Th	Th	H	T	O
(b)	2	4	0	0	3
+	7	2	5	4	2
+		3	2	2	1

2. Add.

- (a) 10,657; 35,101 and 33,333
(c) 68,293; 439 and 30,292
(e) 333; 55,555 and 2,222

- (b) 25,762; 21,234 and 10,001
(d) 42,738; 3,141 and 52,180
(f) 554; 2,132 and 81,419

3. Arrange in columns and add.

(a) 3,53,175; 25,130 and 1,40,535

(b) 8,20,015; 17,057 and 1,30,155

(c) 2,535; 123 and 6,53,313

(d) 444; 4,444 and 4,44,444

(e) 35,015; 253 and 77,893

(f) 70,056; 4,38,295 and 6,666

4. Find the sum of the largest number of four digits and the smallest number of five digits.

PROPERTIES OF ADDITION

Add 75,312 and 12,313

Order of the addends has been changed.

$$75,312 + 12,313 = \underline{\hspace{2cm}}$$

$$12,313 + 75,312 = \underline{\hspace{2cm}}$$

Remember

When we change the order of the addends, the sum remains the same.

Now let us add three numbers.

Add 2, 5 and 8

We can add these numbers in six different orders (ways).

1st order 2nd order 3rd order 4th order 5th order 6th order

2	2	5	5	8	8
5	8	2	8	2	5
+ 8	+ 5	+ 8	+ 2	+ 5	+ 2
<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
15	15	15	15	15	15

The sum remains the same.

Remember

The sum remains the same, even after changing the order of the addends.

Add and fill in the blanks. Two have been done for you.

(a) $7 + 0 = 7$

(b) $0 + 15 = 15$

(c) $25 + 0 =$ _____

(d) $0 + 372 =$ _____

(e) $75,312 + 0 =$ _____

(f) $0 + 52,341 =$ _____

I can do it.



Remember

When zero is added to a number or a number is added to zero, the sum is the number itself.

Worksheet 2

1. Fill in the blanks.

(a) $75,361 + 2,135 = 2,135 +$ _____

(b) $45,793 + 15,911 =$ _____ $+ 45,793$

(c) $92,501 + 123 + 111 = 111 + 92,501 +$ _____

(d) $21,511 + 222 + 11,333 = 21,511 +$ _____ $+ 222$

(e) $76 +$ _____ $+ 92 =$ _____ $+ 92 + 15$

(f) _____ $+ 615 + 62 = 617 +$ _____ $+ 615$

(g) $75,312 + 0 =$ _____

(h) $0 + 9,21,216 =$ _____

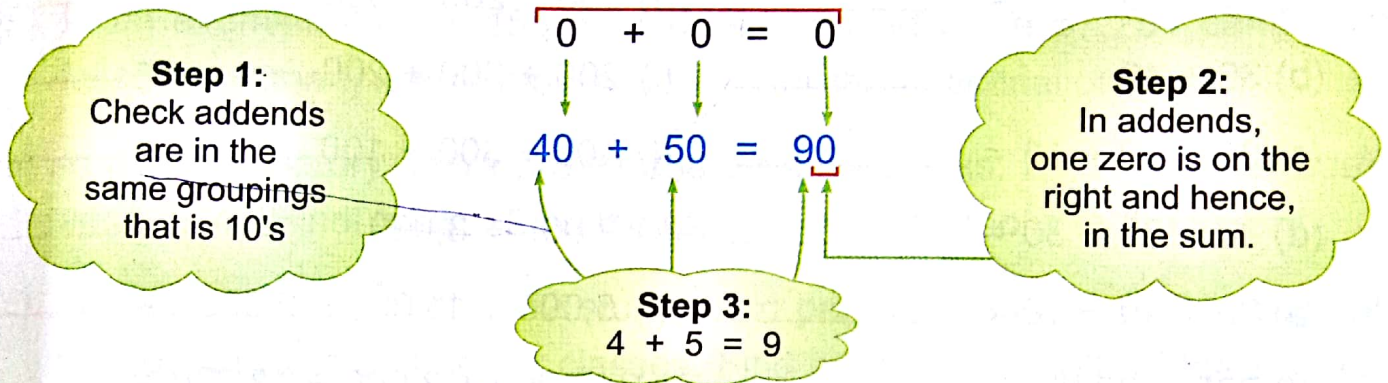
(i) $5,79,301 + 0 = 0 +$ _____

(j) $0 + 2,571 = 2,571 +$ _____

(k) $723 +$ _____ $= 723$

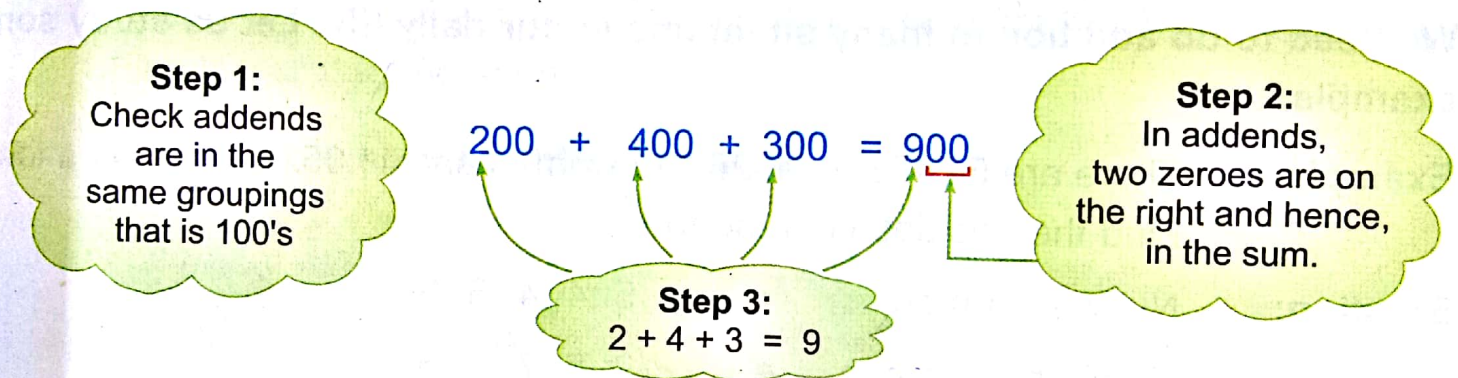
ADDITION (ORALLY)

Add 40 and 50 orally.

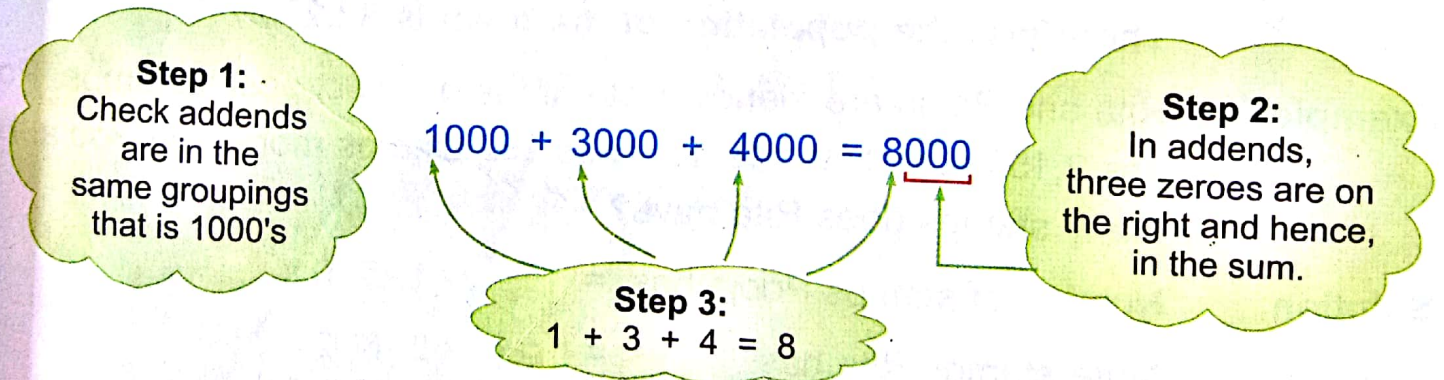


In the same way, we can add:

(i) 200; 400 and 300



(ii) 1,000; 3,000 and 4,000



Worksheet 3

1. Add orally.

(a) $70 + 20 =$ _____

(b) $30 + 40 =$ _____

(c) $20 + 60 + 10 =$ _____

(d) $30 + 20 + 30 =$ _____

(e) $30 + 40 + 20 =$ _____

(f) $700 + 200 =$ _____

(g) $900 + 500 =$ _____

(h) $100 + 200 + 500 =$ _____

(i) $200 + 300 + 200 =$ _____

(j) $400 + 300 + 100 =$ _____

(k) $2,000 + 3,000 =$ _____

(l) $5,000 + 11,000 + 2,000 =$ _____

(m) $13,000 + 3,000 + 13,000 =$ _____

(n) $47,000 + 13,000 =$ _____

Word Problems

We need to do addition in many situations in our daily life. Let us study some examples.

Example 1: There are 54,453 men, 26,725 women and 11,052 children in a town. Find the population of the town.

Solution:

Number of men = 5 4 4 5 3

Number of women = 2 6 7 2 5

Number of children = + 1 1 0 5 2

Population = 9 2 2 3 0

Therefore, the population of the town is 92,230.

Example 2: Rita and Pooja are friends. Both of them collect postal stamps. Pooja has 2,150 postal stamps. Rita has 262 stamps more than Pooja. How many stamps does Rita have?

Solution:

Number of stamps Pooja has = 2 1 5 0

More stamps Rita has = + 2 6 2

Number of stamps Rita has = 2 4 1 2

Therefore, Rita has 2,412 postal stamps.

Worksheet 4

1. Solve the following word problems.

- (a) In an examination, 29,456 candidates passed while 57,281 candidates failed. How many candidates appeared for the examination?
- (b) In a school library, there are 11,250 Science books, 21,312 Maths books and 20,143 Hindi books. Find the total number of books in the library.
- (c) In a school, there are 1,752 students in primary classes, 1,825 in middle classes and 1,790 in senior classes. Find the total strength of the school.
- (d) The cost of a black and white T.V. set is ₹ 3,690. The cost of a colour T.V. set is ₹ 12,810 more than the cost of black and white T.V. set. Find the total cost of both the T.V. sets.
- (e) Raman purchased a house for ₹ 6,65,700. He spent ₹ 2,975 on its repairs. Find the amount he spent in all.

Let us discuss more about Subtraction now.



Do you know Subtrahend & Minuend?

$$\begin{array}{r} 9 \quad 8 \quad 1 \quad 5 \\ - 7 \quad 5 \quad 3 \quad 7 \\ \hline 2 \quad 2 \quad 7 \quad 8 \end{array}$$

Minuend is the number from which we subtract.

Subtrahend is the number to be subtracted.

Difference

SUBTRACTION (5-DIGIT NUMBERS AND 6-DIGIT NUMBERS)

Example 1: Subtract 32,573 from 75,492.

First of all, let us arrange the numbers in the column form.

	T.Th	Th	H	T	O
			10		10
	7	5 ⁴	4	9 ⁸	2
-	3	2	5	7	3
	4	2	9	1	9

We cannot subtract 3 from 2, so we borrow 1 ten from tens column.

We can subtract 7 from 8 in hundreds column.

We cannot subtract 5 from 4 in hundreds column, so we borrow 1 thousand (10 hundreds) from thousands column.

We can subtract 2 from 4 in thousands column.

Subtracting 3 ten thousands from 7 ten thousands, i.e. 7 ten thousands - 3 ten thousands = 4 ten thousands.

Thus, the difference between 75,492 and 32,573 is 42,919.

Example 2: Subtract 5,29,257 from 7,97,305.

	L	T.Th	Th	H	T	O
			10		10 ⁹	10
	7	9 ⁸	7	3 ²	0	5
-	5	2	9	2	5	7
	2	6	8	0	4	8

We cannot subtract 7 from 5. Let us borrow 1 ten from tens column.

But in tens column there are zero tens. So, let us first borrow 1 hundred (10 tens) from hundreds column and then, take 1 ten from there.

We cannot subtract 9 from 7. So, let us borrow 1 ten thousands (10 thousands) from ten thousands column.

8 ten thousands - 2 ten thousands = 6 ten thousands.

7 lakhs - 5 lakhs = 2 lakhs.

Thus, the difference between 7,97,305 and 5,29,257 is 2,68,048.

To check the difference: Sum of the subtrahend and the difference should be equal to the minuend, as shown below:

7 9 7 3 0 5	Minuend	→	5 2 9 2 5 7
- 5 2 9 2 5 7	Subtrahend	→	+ 2 6 8 0 4 8
2 6 8 0 4 8	Difference	→	7 9 7 3 0 5

Worksheet 5

1. Subtract.

(a) 78,321 from 85,213

(b) 96,570 from 97,295

(c) 62,783 from 71,057

(d) 88,732 from 89,560

(e) 42,150 from 50,000

(f) 53,008 from 79,096

2. Find the difference between—

(a) 6,54,372 and 1,28,453

(b) 9,76,517 and 5,28,753

(c) 5,484 and 7,98,454

(d) 57,357 and 2,99,059

(e) 9,76,287 and 62,578

(f) 64,686 and 9,86,468

3. Perform the following subtraction and check the answers.

(a) 9,347 – 1,251

(b) 6,792 – 4,321

(c) 62,546 – 61,777

(d) 1,90,000 – 89,999

(e) 6,98,527 – 2,56,798

(f) 5,43,922 – 4,31,789

4. Find the difference between the largest number of five digits and the smallest number of three digits.

PROPERTIES OF SUBTRACTION

We already know,

$$7 - 0 = 7$$

$$5 - 0 = 5$$

Remember

When we subtract zero from a number, we get the number itself.

Worksheet 6

1. Subtract the following:

(a) $16 - 0 = \boxed{}$

(b) $78 - 0 = \boxed{}$

(c) $82 - \boxed{} = 82$

(d) $432 - \boxed{} = 432$

(e) $\boxed{} - 0 = 732$

(f) $\boxed{} - 0 = 1,689$

(g) $457 - \boxed{} = 457$

(h) $\boxed{} - 0 = 6,955$

(i) $513 - \boxed{} = 513$

(j) $0 - \boxed{} = 0$

SUBTRACTION (ORALLY)

Subtract 30 from 90 orally.

Step 1:

Check minuend and subtrahend are in the same places, that is tens.

$$\begin{array}{r} 0 - 0 = 0 \\ 90 - 30 = 60 \end{array}$$

Step 3:

$$9 - 3 = 6$$

Step 2:

In 90 and 30, one zero is on the right and hence, in the difference.

In the same way, we can subtract:

(i) 500 from 900

$$900 - 500 = 400$$

$$9 - 5 = 4$$

In 900 and 500,
two zeroes are on the
right and hence, in
the difference.

(ii) 2,000 from 6,000

$$6000 - 2000 = 4000$$

$$6 - 2 = 4$$

In 6,000 and 2,000,
three zeroes are on
the right and hence, in
the difference.

Worksheet 7

1. Subtract orally.

(a) $60 - 20 =$ _____ (b) $90 - 20 =$ _____

(c) $40 - 30 =$ _____ (d) $80 - 30 =$ _____

(e) $400 - 200 =$ _____ (f) $700 - 300 =$ _____

(g) $900 - 400 =$ _____ (h) $8,000 - 3,000 =$ _____

(i) $7,000 - 4,000 =$ _____ (j) $8,000 - 6,000 =$ _____

(k) $27,000 - 17,000 =$ _____ (l) $45,000 - 4,000 =$ _____

(m) $99,000 - 9,000 =$ _____ (n) $16,000 - 11,000 =$ _____

Word Problems

We need to do subtraction in many situations in our daily life. Let us see some examples.

Example 1: There are 62,438 bags of rice in a godown. Out of these, 15,259 bags were sent to different markets for sale. How many bags remained in the godown?

Solution: Total number of bags

$$= 62438$$

Number of bags sent to different markets

$$= - 15259$$

Number of bags left

$$= \underline{47179}$$

Thus, 47,179 bags of rice remained in the godown.

Example 2: Mr Gupta's monthly salary is ₹ 12,530. His wife earns ₹ 550 less than Mr Gupta. Find the monthly salary of Mrs Gupta.

Solution: Mr Gupta's monthly salary

$$= 12530$$

Less salary Mrs Gupta earns

$$= - 550$$

Mrs Gupta's salary

$$= \underline{11980}$$

Thus, the monthly salary of Mrs Gupta is ₹ 11,980.

Worksheet 8

1. Solve the following word problems.

- There are 48,570 plants in a nursery. Its adjoining nursery has 51,200 plants. Which nursery has more plants and by how much?
- In 2011, the population of a town was 5,75,890. If the number of males was 2,98,170, find the number of females in the town.
- How much more is 16,500 than 14,756?
- What must be subtracted from 5,25,873 to get 1,75,693?

Value Based Question

Amol, Deepak and Krishna were good friends. Of these three friends, Krishna was very poor. He was not able to buy new books and new set of uniform for his new class. Amol and Deepak wanted to help Krishna. They spoke to their parents and gave ₹ 1,250 and ₹ 1,075 to Krishna. It helped Krishna buy books and uniform for the new class.



1. How much money did Amol and Deepak give to Krishna?
2. If Krishna needed ₹ 2,000 for his new books and uniform, how much money is left with him?
3. How do you feel when you help others?

Brain Teasers (ADDITION & SUBTRACTION)

1. Tick (✓) the correct answer.

- (a) When we add 100 to 9,136, the digit at _____ place increases by 1.
(i) ones (ii) hundreds (iii) tens (iv) thousands
- (b) The greatest 2-digit number is _____ less than the smallest 3-digit number by—
(i) 10 (ii) 9 (iii) 1 (iv) 0
- (c) $7,000 - 5,000 - 2,000 =$ _____
(i) 0 (ii) 3,000 (iii) 2,000 (iv) 1,000
- (d) 400 more than the successor of 399 is equal to _____
(i) 401 (ii) 499 (iii) 400 (iv) 800

- (e) $10 + 101 + 1,001 + 10,001$ is equal to _____
- (i) 10,013 (ii) ~~11,113~~ (iii) 40,111 (iv) 11,001

2. Solve:

- (a) $85,781 + 78,989$
(b) $48,125 + 9,999$
(c) $7,56,480 - 51,345$
(d) $80,000 - 79,899$

3. Write down the largest number and the smallest number of four digits which no digit is repeated and also add them.

4. You are given a magic square. Use the numbers from 1 to 9 only once and complete it so that every row and every column adds up to 15.

4	
3	5
	1

- 5. A student was asked to write numeral for seventy six thousand and f. He wrote 7,605. Find the difference between the correct answer and answer.**
- 6. The difference between two numbers is 48,506 and the greater number 1,00,009. Find the smaller number.**
- 7. Fill in the blanks.**

- (a) $4,128 + \underline{\hspace{2cm}} = 4,128$
(b) $\underline{\hspace{2cm}} + 82 + 71 = \underline{\hspace{2cm}} + 96 + 82$
(c) If $75 + 169 + 1,001 = 1,245$ then, $1,001 + 75 + 169 = \underline{\hspace{2cm}}$
(d) $11,111 + 1,111 + 111 + 11 + 1 = \underline{\hspace{2cm}}$
(e) $\underline{\hspace{2cm}} - 0 = 785$
(f) $4,500 - 1,500 = \underline{\hspace{2cm}}$
(g) $18,000 - \underline{\hspace{2cm}} = 8,000$
(h) $7,500 + 2,500 = \underline{\hspace{2cm}}$

MULTIPLICATION

Do you remember multiplication?



Let us solve some problems.

1. Multiply.

$$\begin{array}{r} (a) \quad 76 \\ \times 13 \\ \hline \end{array}$$

$$\begin{array}{r} (b) \quad 532 \\ \times 25 \\ \hline \end{array}$$

$$\begin{array}{r} (c) \quad 127 \\ \times 43 \\ \hline \end{array}$$

$$\begin{array}{r} (d) \quad 483 \\ \times 21 \\ \hline \end{array}$$

2. Multiply.

(a) 62 by 2

(b) 101 by 5

(c) 98 by 21

(d) 213 by 42

3. Find the product.

(a) 713×3

(b) 42×50

(c) 220×10

(d) 411×23

Let us discuss more about Multiplication.



Do you know Multiplicand and Multiplier?

$$\begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array}$$

← Multiplicand (the number to be multiplied)
 ← Multiplier (the number by which we multiply)
 ← Product (the answer we get after multiplication)

MULTIPLICATION (3-DIGIT AND 4-DIGIT NUMBER BY A 3-DIGIT NUMBER)

Example: Multiply 2,135 by 327

	L	T.Th	Th	H	T	O
			2	1	3	5
			\times	3	2	7
			<hr/>			
		1	4	9	4	5
+		4	2	7	0	0
+	6	4	0	5	0	0
		<hr/>				
	6	9	8	1	4	5

327 (the multiplier) can be written as:

$$327 = 3 \text{ hundreds} + 2 \text{ tens} + 7 \text{ ones} \\ = 300 + 20 + 7$$

Step 1 : Find $2,135 \times 7$ Step 2 : Find $2,135 \times 20$ Step 3 : Find $2,135 \times 300$ Step 4 : Product of Step 1 + Product of Step 2
+ Product of Step 3Thus, $2,135 \times 327 = 6,98,145$

For the Teacher:

In this Chapter, we are discussing the multiplication of a 3-digit and 4-digit number by a 3-digit number with product not exceeding 9,99,999.

Worksheet 1**1. Multiply.**

(a) 317×125

(b) 89×243

(c) 734×162

(d) 931×217

(e) 753×135

(f) 731×307

2. Multiply.

(a) 431 by 721

(b) 821 by 621

(c) 972 by 340

(d) 435 by 425

(e) 1,432 by 211

(f) 7,312 by 135

3. Find the product.

(a) 437×211

(b) 713×217

(c) 982×133

(d) 345×264

(e) $1,732 \times 259$

(f) $1,083 \times 847$

4. Using the digits 3, 1 and 5 only once, write the smallest and the largest 3-digit numbers. Also find their product.

Let us find 7×3 and 3×7

$$\begin{array}{c} \textcircled{7} \times \textcircled{3} = \end{array} \begin{array}{|c|} \hline 21 \\ \hline \end{array}$$

$$\begin{array}{c} \textcircled{3} \times \textcircled{7} = \end{array} \begin{array}{|c|} \hline 21 \\ \hline \end{array}$$

Numbers being multiplied in different order

Same product

Similarly, find:

$$12 \times 8 = \boxed{}$$

$$8 \times 12 = \boxed{}$$

Is the product
in both the
cases same?

Yes/No

Remember

If two numbers are multiplied in either order, the product remains the same.

Thus, from the above example we conclude:

$$7 \times 3 = 3 \times 7$$

$$12 \times 8 = 8 \times 12$$

Now, let us multiply three numbers.

Multiply 2, 5 and 8.

We can multiply three numbers in six different orders.

1st order	:	$2 \times 5 \times 8$	=	80
2nd order	:	$5 \times 2 \times 8$	=	80
3rd order	:	$8 \times 2 \times 5$	=	80
4th order	:	$2 \times 8 \times 5$	=	80
5th order	:	$5 \times 8 \times 2$	=	80
6th order	:	$8 \times 5 \times 2$	=	80

Product is the same

In order to multiply three numbers,
first we multiply two of them
and then, multiply the product
obtained, by the third number.

Example:

$$\begin{array}{c} 2 \times 5 \times 8 \\ \downarrow \\ 10 \times 8 = 80 \end{array}$$

Remember

If three numbers are multiplied in any order, the product remains the same.

Multiplication by 1:

(a) $17 \times 1 = 17$

(b) $1 \times 48 = 48$

Multiplication by zero:

(a) $7 \times 0 = 0$

(b) $0 \times 18 = 0$

Remember

The product of a number and 1 is the number itself.

Remember

The product of any number and zero is zero.

Worksheet 2

1. Using the properties of multiplication, fill in the blanks.

(a) If $4 \times 56 = 224$ then, $56 \times 4 =$ _____

(b) If $73 \times 12 = 876$ then, $12 \times 73 =$ _____

(c) $925 \times 213 = 213 \times$ _____

(d) $621 \times 127 =$ _____ $\times 621$

(e) _____ $\times 615 =$ _____ $\times 713$

(f) $7,256 \times 1 =$ _____

(g) $1 \times 276 =$ _____

(h) _____ $\times 396 = 396$

(i) If $43 \times 2 \times 4 = 344$ then, $2 \times 43 \times 4 =$ _____

(j) $11 \times$ _____ $\times 42 =$ _____ $\times 42 \times 56$

(k) $90 \times 0 =$ _____

(l) $356 \times$ _____ $= 0$

(m) $71 \times 0 \times 35 =$ _____



MULTIPLICATION (ORALLY)

Now, let us see the following pattern.

$$2 \times 60 = 120$$

$2 \times 6 = 12$ with **one zero** on right side.

$$2 \times 600 = 1200$$

$2 \times 6 = 12$ with **two zeroes** on right side.

$$2 \times 6000 = 12000$$

$2 \times 6 = 12$ with **three zeroes** on right side.

Remember

In order to multiply a number by 100, 200,, 900, we multiply the number by 1, 2,, 9 respectively, and put two zeroes on the right of the product. Similarly, we put three zeroes if we multiply a number by 1000, 2000,, 9000.

Worksheet 3

1. Find the product orally.

- | | |
|-------------------------------|--------------------------------|
| (a) $44 \times 100 =$ _____ | (i) $42 \times 300 =$ _____ |
| (b) $96 \times 1,000 =$ _____ | (j) $12 \times 8,000 =$ _____ |
| (c) $18 \times 1,000 =$ _____ | (k) $10 \times 1,000 =$ _____ |
| (d) $9 \times 40 =$ _____ | (l) $7 \times 40 =$ _____ |
| (e) $7 \times 400 =$ _____ | (m) $7 \times 4,000 =$ _____ |
| (f) $5 \times 900 =$ _____ | (n) $9 \times 80 =$ _____ |
| (g) $9 \times 8,000 =$ _____ | (o) $8 \times 7,000 =$ _____ |
| (h) $31 \times 200 =$ _____ | (p) $459 \times 1,000 =$ _____ |

2. Fill in the blanks.

(a) $75 \times 1,000 =$ _____

(b) $25 \times$ _____ $= 2,500$

(c) _____ $\times 1,000 = 68,000$

(d) $33 \times$ _____ $= 33,000$

Word Problems

We need to do multiplication in many situations in our daily life. Let us see some examples.

Example 1: In a library, there are 1,250 books in each almirah. There are 62 almirahs in the library. Find the total number of books in the library.

Solution: Number of books in each almirah = 1,250

Number of almirahs = 62

Total number of books in 62 almirahs =

$$\begin{array}{r} 1250 \\ \times 62 \\ \hline 2500 \\ + 75000 \\ \hline 77500 \end{array}$$

Thus, the number of books in 62 almirahs is 77,500.

Example 2: Rajat saves ₹ 350 every month. How much money can he save (i) in 12 months (ii) in four years?

Solution: (i) Money saved by Rajat in one month = ₹ 350

Money saved in 12 months = ₹ 350

$$\begin{array}{r} 350 \\ \times 12 \\ \hline 700 \\ + 3500 \\ \hline ₹ 4200 \end{array}$$

Rajat saves ₹ 4,200 in 12 months.

(ii) We know that one year = 12 months

Money saved in one year = ₹ 4,200

Money saved in four years = ₹ 4200

$$\begin{array}{r} 4200 \\ \times 4 \\ \hline ₹ 16800 \end{array}$$

Therefore, in four years, he can save ₹ 16,800.

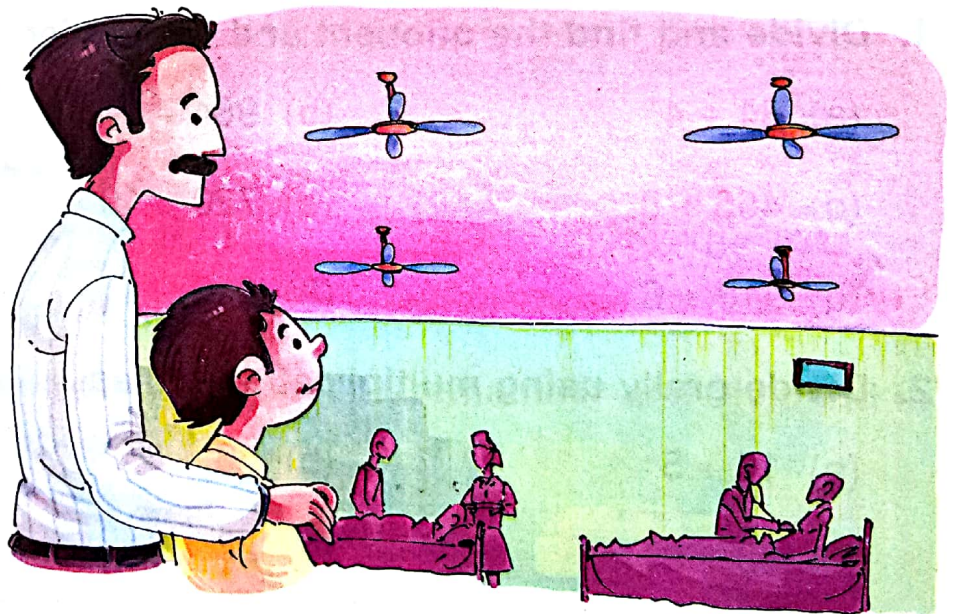
Worksheet 4

1. Solve the following word problems.

- There are 850 toffees in a packet. How many toffees are there in 215 packets?
- A can of oil contains 15 litres of oil. How much oil is there in 240 such cans?
- There are 238 beads in a necklace. Find the total number of beads in 167 such necklaces.
- One dozen bananas cost ₹ 36. What is the cost of 720 dozen bananas?
- There are 1,000 pages in a book. How many pages are there in 75 such books?

Value Based Question

Rohan visited a charitable hospital with his grandparents during a summer vacation. There he saw that most of the fans were not in proper working condition. Rohan wanted to help the patients of the charitable hospital by donating some fans. He spoke to his father who was the president of his colony. The colony donated 35 fans to the charitable hospital. The hospital authorities were thankful to Rohan and his father.

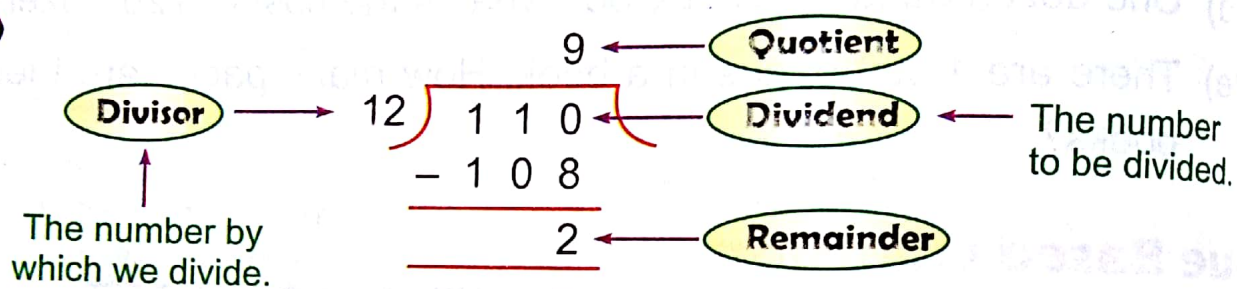


- If the cost of one fan is ₹ 895, how much money was spent on the fans?
- In what other ways can you help a charitable hospital?



Do you remember division?
Let us recall....

Division is fun
when you know your
multiplication tables
by heart!



1. Divide and find the quotient and remainder.

(a) $84 \div 4$

(b) $984 \div 9$

(c) $786 \div 10$

(d) $465 \div 8$

(e) $720 \div 10$

(f) $864 \div 8$

(g) $118 \div 6$

(h) $226 \div 4$

(i) $643 \div 7$

2. Divide orally using multiplication tables.

(a) $15 \div 5$

(b) $56 \div 8$

(c) $70 \div 10$

(d) $63 \div 9$

(e) $28 \div 7$

(f) $36 \div 6$

3. Fill in the blanks.

(a) $17 \div 1 = \boxed{}$

(b) $0 \div 8 = \boxed{}$

(c) $32 \div 32 = \boxed{}$

(d) $9 \div \boxed{} = 9$

(e) $\boxed{} \div 6 = 0$

(f) $\boxed{} \div 1 = 16$

RELATIONSHIP BETWEEN DIVIDEND, DIVISOR, QUOTIENT & REMAINDER

Let us solve $20 \div 3$

$$\begin{array}{r} 6 \\ 3 \overline{) 20} \\ \underline{- 18} \\ 2 \end{array}$$

Here, Quotient = 6
Remainder = 2
Divisor = 3
Dividend = 20

Find divisor \times quotient,

$$= 3 \times 6 = 18$$

Add remainder to it,

$$18 + \text{remainder}$$

$$= 18 + 2 = 20 \quad \leftarrow \text{(same as the dividend)}$$

So, we conclude that: **Divisor \times Quotient + Remainder = Dividend**

$$\text{Divisor} \times \text{Quotient} + \text{Remainder} = \text{Dividend}$$

Worksheet 1

1. Divide and check your answers.

- (a) 98 by 8 (b) 87 by 9 (c) 725 by 10
(d) 547 by 7 (e) 918 by 10 (f) 132 by 6

2. Keeping the relation between divisor, quotient, remainder and dividend in mind, find the missing numbers.

	Divisor	Quotient	Remainder	Dividend
(a)	8	6	4	<input type="text"/>
(b)	3	11	2	<input type="text"/>
(c)	8	8	0	<input type="text"/>
(d)	8	7	<input type="text"/>	56
(e)	6	4	<input type="text"/>	27

DIVISION (4-DIGIT NUMBER BY SINGLE DIGIT NUMBER)

Remember

We start division from the extreme left of dividend.

Example 1: Divide 2,142 by 8.

Solution: We arrange the numbers as:

Th	H	T	O
2	1	4	2
8 $\overline{) 2142}$			
- 16			
5	4		
- 48			
6	2		
- 56			
6			

Step 1

Step 2

Step 3

Step 2:

Bring next digit, that is 4 down.

It gives 54 tens. Divide 54 tens by 8.

$54 \div 8 = 6$ as quotient, with remainder 6.

Write **6** at tens place in quotient.

We get **Quotient = 267, Remainder = 6**

Step 1:

We start with thousands. As $2 < 8$, we shall take next digit, that is 1 together.

Now, divide 21 hundreds by 8

Recite the multiplication table of 8:

$$2 \times 8 = 16 < 21$$

$$3 \times 8 = 24 > 21$$

$21 \div 8 = 2$ as quotient, with remainder 5. Write **2** at hundreds place in quotient.

Step 3:

Bring next digit, that is 2 down. It gives 62 ones. Divide 62 ones by 8.

$62 \div 8 = 7$ as quotient, with remainder 6.

Write **7** at ones place in quotient.

Example 2: Divide 6,507 by 6.

Solution:

Th	H	T	O
1	0	8	4
6 $\overline{) 6507}$			
- 6			
0	5		
- 0			
5	0		
- 48			
2	7		
- 24			
3			

Divide 6 thousands by 6.

Divide 5 hundreds by 6.
Recite multiplication table of 6:
 $1 \times 6 = 6 > 5$ but $6 \times 0 = 0 < 5$.

Divide 5 tens by 6.

Divide 27 ones by 6.

We get **Quotient = 1084, Remainder = 3**

Worksheet 2

1. Divide and write quotient and remainder.

(a) $7,525 \div 5$

(b) $8,296 \div 4$

(c) $4,926 \div 7$

(d) $2,786 \div 3$

(e) $4,924 \div 8$

(f) $4,528 \div 9$

2. Divide and check your answer.

(a) 7,352 by 2

(b) 4,325 by 6

(c) 7,316 by 5

(d) 4,217 by 8

(e) 6,275 by 4

(f) 1,026 by 3

DIVISION (4-DIGIT NUMBER BY 2-DIGIT NUMBER)

Example 1: Divide 9,856 by 23.

Solution: We arrange the numbers as:

	Th	H	T	O	
		4	2	8	
23	9	8	5	6	Step 1
-	9	2			
		6	5		Step 2
-		4	6		
		1	9	6	Step 3
-		1	8	4	
		1	2		

Step 1:

We start with thousands. As $9 < 23$, take next digit, that is 8 together with 9. Divide 98 hundreds by 23. Multiplication table of 23 gives:

$$23 \times 4 = 92 < 98$$

$$23 \times 5 = 115 > 98$$

$98 \div 23 = 4$ as quotient, with remainder 6. Write 4 at hundreds place in quotient.

Step 3:

Bring next digit, that is 6 down. It gives 196 ones. Divide 196 ones by 23. Multiplication table of 23 gives:

$$23 \times 8 = 184 < 196$$

$$23 \times 9 = 207 > 196$$

$196 \div 23 = 8$ as quotient, with remainder 12. Write 8 at ones place in quotient.

Step 2:

Bring next digit, that is 5 down. It gives 65 tens. Divide 65 tens by 23. Multiplication table of 23 gives:

$$23 \times 2 = 46 < 65$$

$$23 \times 3 = 69 > 65$$

$65 \div 23 = 2$ as quotient, with remainder 19. Write 2 at tens place in quotient.

We get **Quotient = 428, Remainder = 12**

Worksheet 3

1. Divide.

(a) $7,982 \div 11$

(b) $6,287 \div 12$

(c) $6,258 \div 25$

(d) $9,826 \div 37$

(e) $1,889 \div 62$

(f) $5,985 \div 75$

2. Divide and check your answers.

(a) 1,826 by 12

(b) 4,210 by 15

(c) 7,615 by 27

(d) 9,885 by 46

(e) 6,016 by 66

(f) 8,423 by 54

DIVISION (5-DIGIT NUMBER BY 2-DIGIT NUMBER)

Example 1: Divide 89,217 by 35

Solution:

	T.Th	Th	H	T	O		
	2	5	4	9			
35	8	9	2	1	7	} Divide 89 thousands by 35.	
-	7	0					
	1	9	2				} Divide 192 hundreds by 35.
-	1	7	5				
		1	7	1		} Divide 171 tens by 35.	
-		1	4	0			
			3	1	7	} Divide 317 ones by 35.	
-			3	1	5		
					2		

We get Quotient = 2549, Remainder = 2

Worksheet 4

1. Divide.

(a) 72,895 by 15

(b) 91,027 by 12

(c) 61,526 by 27

(d) 54,327 by 45

(e) 41,276 by 68

(f) 91,257 by 54

2. Find the quotient and the remainder.

(a) $62,825 \div 21$

(b) $52,525 \div 25$

(c) $12,157 \div 12$

(d) $70,012 \div 49$

(e) $98,125 \div 62$

(f) $62,923 \div 26$

DIVISION (ORALLY)

In Class-III, we have learnt dividing a number by 10 (orally), let us recall:

$$\begin{array}{c} \text{Quotient} \quad \underline{45} \quad \underline{9} \div 10 \\ \text{Remainder} \\ \text{(one digit from right)} \end{array}$$

When a number is divided by 10, the quotient is obtained by removing the first digit from right. The digit removed is the remainder.

In the same way, we can divide orally by 100:

$$\begin{array}{c} \text{Quotient} \quad \underline{69} \quad \underline{26} \div 100 \\ \text{Remainder} \\ \text{(two digits from right)} \end{array}$$

When a number is divided by 100, the quotient is obtained by removing the first two digits from right. The digits removed is the remainder.

Divide orally by 1000:

$$\begin{array}{c} \text{Quotient} \quad \underline{982} \quad \underline{17} \div 1000 \\ \text{Remainder} \\ \text{(three digits from right)} \end{array}$$

When a number is divided by 1000, the quotient is obtained by removing the first three digits from right. The digits removed is the remainder.

Worksheet 5

1. Complete the following table.

		Quotient	Remainder
(a)	7,321 ÷ 10 <i>16</i>	732	1
(b)	213 ÷ 10 <i>9</i>		
(c)	19,827 ÷ 10 <i>17</i>		
(d)	4,324 ÷ 100 <i>16</i>		
(e)	98,276 ÷ 100 <i>42</i>		
(f)	62,731 ÷ 100 <i>51</i>		
(g)	47,321 ÷ 1000 <i>66</i>		
(h)	9,827 ÷ 1000 <i>13</i>		
(i)	62,578 ÷ 1000 <i>11</i>		
(j)	12,345 ÷ 1000 <i>19</i>		
(k)	98,271 ÷ 10 <i>23</i>		
(l)	73,219 ÷ 100 <i>25</i>		

$$\begin{array}{r} 8065279 \\ - 52378 \\ \hline \end{array}$$

$$\begin{array}{r} 905618 \\ - 379 \\ \hline \end{array}$$

$$\begin{array}{r} 168919 \\ - 1519 \\ \hline \end{array}$$

Word Problems

We need to do division in many situations in our daily life. Let us study some examples.

Example 1: The cost of five pens of the same type is ₹ 75. Find the cost of one pen.

Solution: Cost of 5 pens = ₹ 75
Cost of 1 pen = ₹ $75 \div 5$

$$\begin{array}{r} 15 \\ 5 \overline{) 75} \\ \underline{- 5} \\ 25 \\ \underline{- 25} \\ 0 \end{array}$$

Therefore, the cost of one pen is ₹ 15.

Example 2: The annual salary of Raman is ₹ 1,57,620. Find his monthly salary.

Solution: Raman's annual salary = ₹ 1,57,620
One year = 12 months
His monthly salary = ₹ $1,57,620 \div 12$

$$\begin{array}{r} 13135 \\ 12 \overline{) 157620} \\ \underline{- 12} \\ 37 \\ \underline{- 36} \\ 16 \\ \underline{- 12} \\ 42 \\ \underline{- 36} \\ 60 \\ \underline{- 60} \\ 0 \end{array}$$

Therefore, Raman's monthly salary is ₹ 13,135.

Worksheet 6

1. Solve the following word problems.

- The cost of nine cycles is ₹ 13,725. Find the cost of one cycle.
- There are equal number of students in each class. In 24 classes, there are 1,104 students. How many students are there in each class?
- A book has 3,125 pages. Reema reads 25 pages daily. In how many days will she finish the whole book?
- 11,424 candles are packed in 24 boxes. How many candles are there in each box?

- (e) The product of two numbers is 7,695. If one of them is 57, find the other.
- (f) 42 books can fit on one shelf of an almirah. How many shelves will 4,116 books require?
- (g) A 75 m ribbon is cut into 15 pieces of same length. What is the length of each piece?

Value Based Question

Today is Neha's birthday. She wants to celebrate it in a different way. She spoke to her parents and they decided to distribute free gifts to the children of an orphanage near their house. Neha distributed gifts worth ₹ 3,360 and was very happy.



1. If there are 32 children in the orphanage, what is the value of each gift?
2. How would you like to celebrate your next birthday?
3. Suggest two different ways in which you can celebrate your birthday.

1. Tick (✓) the correct answer.

(a) There are _____ dozens in 264.

(i) 44

(ii) 22

(iii) 13

(iv) 11

(b) 2 lakh \times _____ = 20 lakh

(i) 0

(ii) 10

(iii) 1

(iv) 100

(c) $7 \times 3 \times 0 \times 5 =$ _____

(i) 21

(ii) 15

(iii) 0

(iv) 105

(d) If Divisor = 7, Remainder = 3, Quotient = 3 then, Dividend = _____

(i) 13

(ii) 16

(iii) 21

(iv) 24

(e) Product of the greatest 2-digit number and the smallest 3-digit number

(i) 990

(ii) 9000

(iii) 99000

(iv) 9900

2. Solve the following sums.

(a) $3,282 \times 213$

(b) $19,816 \times 6$

(c) $4,172 \div 26$

(d) $14,865 \div 15$

3. Replace ★ by the correct number.

$$\begin{array}{r}
 \text{(a)} \quad \begin{array}{r} 1 \ 8 \ 2 \ 9 \\ \times 3 \ 1 \ 8 \\ \hline 1 \ \star \ 6 \ 3 \ 2 \\ + \quad 1 \ 8 \ 2 \ 9 \ \star \\ + \star \ 4 \ 8 \ \star \ \star \ \star \\ \hline 5 \ \star \ 1 \ 6 \ 2 \ 2 \end{array}
 \end{array}$$

(c) $\star \div 60 = 10$

(b) $432 \div \star = 24$

$$\begin{array}{r}
 \text{(d)} \quad \begin{array}{r} 2 \ 1 \ 9 \ 8 \\ \times 1 \ 2 \ 5 \\ \hline 1 \ 0 \ 9 \ 9 \ 0 \\ + \quad 4 \ 3 \ \star \ 6 \ \star \\ + \star \ 1 \ \star \ 8 \ \star \ \star \\ \hline 2 \ \star \ 4 \ 7 \ \star \ 0 \end{array}
 \end{array}$$

4. Divide and check the answer.

(a) 2,000 by 12

(b) 7,682 by 45

5. Given that $270 \times 15 = 4,050$, find the product.

(a) 270×16

(b) 270×14

6. What is the total cost of fencing 275 plots of land if the cost of fencing one plot of land is ₹ 950?

7. Fill in the blanks.

(a) $7,612 \times \underline{40} = 40 \times 7,612$

(b) $\underline{89,210} \times 1 = 89,210$

(c) $515 \times \underline{5} \times 18 = 5 \times \underline{515} \times 18$

(d) $10 \times \underline{800} = 8,000$

(e) $176 \div \underline{1} = 176$

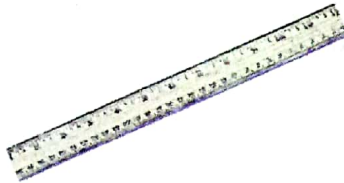
(f) $\underline{0} \div 82 = 0$

(g) If $85,715 \div 35 = 2,449$ then, $85,715 \div 2,449 = \underline{35}$

(h) $7,542 \div 1000$, quotient = $\underline{7542000}$ and remainder = $\underline{0}$



Do you remember
Centimetre (cm), Metre (m), Kilometre (km)?



We know:
1 metre = 100 cm
1 kilometre = 1000 m

We also know:
The standard unit
of length is **metre**.
The smallest unit of length
is **millimetre (mm)**.



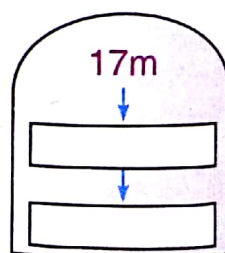
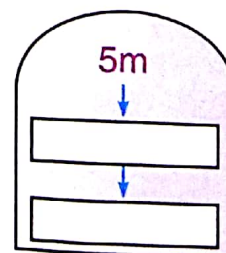
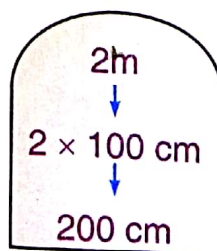
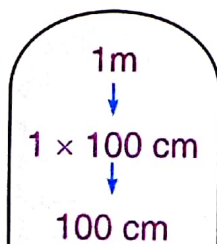
1. Name any five things sold by a shopkeeper by measuring length.
2. Find the length of any three objects in your classroom.
3. Which unit will you choose to express the following:
 - (a) Height of a telephone pole.
 - (b) Length of your skirt/sho
 - (c) Distance between Delhi & Agra.
 - (d) Height of your study ta
 - (e) Distance between Earth & Moon.
 - (f) Length of a road.

CONVERSIONS

Converting bigger unit into smaller unit

1. Converting metres into centimetres

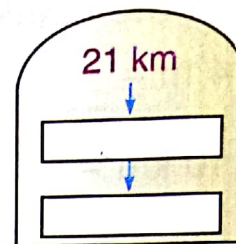
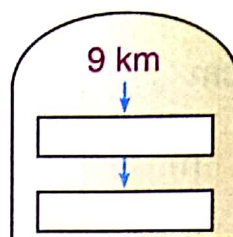
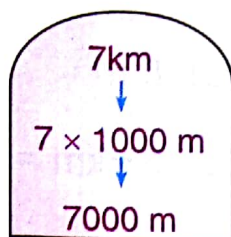
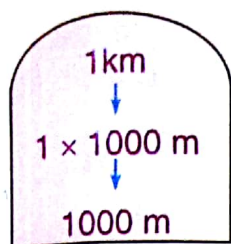
$$1 \text{ m} = 100 \text{ cm}$$



We multiply number of metres by 100 to convert
'metres' into 'centimetres'.

II. Converting kilometres into metres

$$1 \text{ km} = 1000 \text{ m}$$



We multiply number of metres by 1000 to convert 'kilometres' into 'metres'.

III. Converting metres and centimetres into centimetres

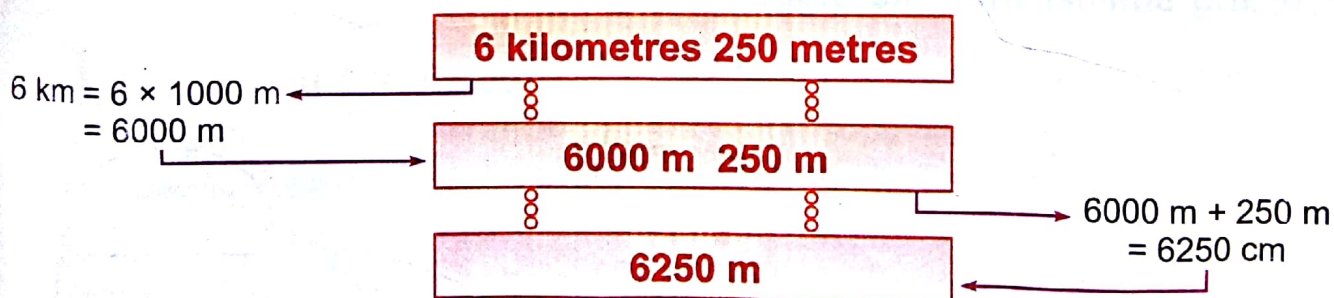
Let us now convert 4 metres 50 centimetres into centimetres.



We convert the number of 'metres' into 'centimetres' and add to it the number of 'centimetres'.

IV. Converting kilometres and metres into metres

Similarly, convert 6 kilometres 250 metres into metres.



We convert the number of 'kilometres' into 'metres' and add to it the number of 'metres'.

Worksheet 1

1. Fill in the blanks.

(a) 4 m = cm

(c) 10 km = m

(b) 8 m = cm

(d) 63 km = m

2. Convert the following into centimetres.

(a) 3 m 40 cm

(b) 19 m 75 cm

(c) 8 m 3 cm

(d) 34 m 5 cm

(e) 17 m 30 cm

(f) 50 m 5 cm

3. Convert the following into metres.

(a) 4 km 315 m

(b) 7 km 125 m

(c) 25 km 500 m

(d) 19 km 5 m

(e) 152 km 35 m

(f) 4 km 8 m

4. State 'True' or 'False'.

(a) 6 m 3 cm = 63 cm

(b) 14 m 20 cm = 1420 cm

(c) 9 km 52 m = 952 m

(d) 2 km 2 m = 2002 m

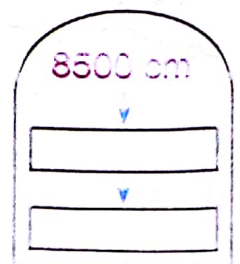
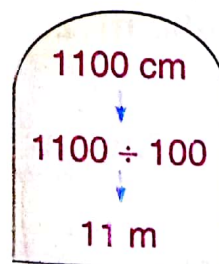
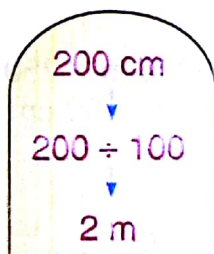
(e) 26 km 516 m = 26516 m

(f) 10000 m = 10 km

Converting smaller unit into bigger unit

I. Converting centimetres into metres

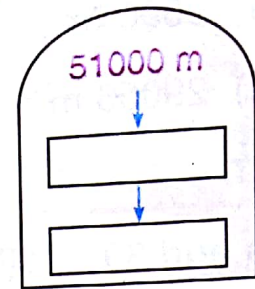
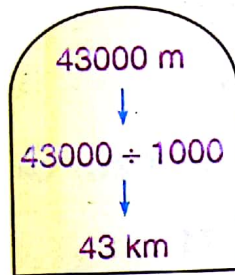
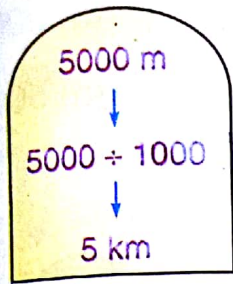
100 cm = 1 m



We divide the number of centimetres by 100 to convert 'centimetres' into 'metres'.

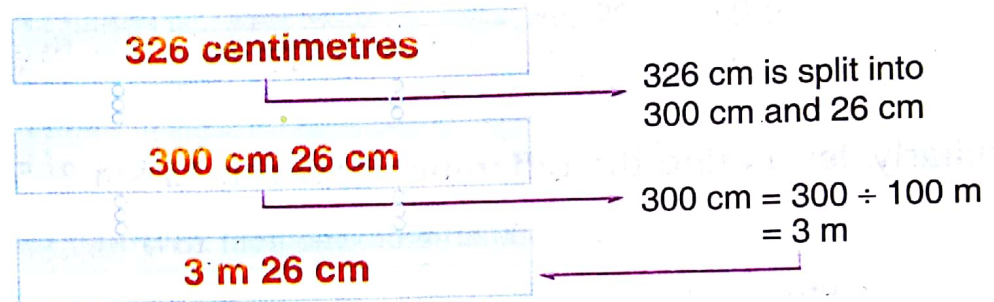
II. Converting metres into kilometres

$$1000 \text{ m} = 1 \text{ km}$$



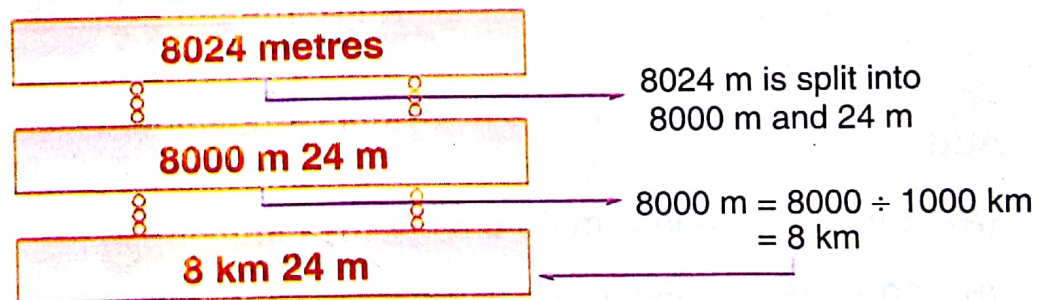
We divide the number of metres by 1000 to convert 'metres' into 'kilometres'.

III. Converting centimetres into metres and centimetres



We divide the number of centimetres by 100 to convert 'centimetres' into 'metres'.

IV. Converting metres into kilometres and metres



We divide the number of metres by 1000 to convert 'metres' into 'kilometres'.

Worksheet 2

1. Convert into metres and centimetres.

- | | | | |
|------------|-------------|-------------|-------------|
| (a) 700 cm | (b) 3500 cm | (c) 750 cm | (d) 4444 cm |
| (e) 625 cm | (f) 301 cm | (g) 5260 cm | (h) 3008 cm |

2. Convert into kilometres and metres.

(a) 9000 m

(b) 35000 m

(c) 2250 m

(d) 3000 m

(e) 29056 m

(f) 5065 m

(g) 15623 m

(h) 5000 m

ADDITION AND SUBTRACTION BY REGROUPING

Let us add 39 m 58 cm and 41 m 71 cm.

m	cm	
1		← carry to 'm' column
39	58	
+ 41	71	
81m	29 cm	← keep in 'cm' column

129 cm → 1m 29 cm



Similarly, let us find the difference between 13 km 355 m and 28 km 175 m.

1 km (1000 m) borrowed from 28 km			
km	m	km	m
27		27	1175
28	175	- 13	355
- 13	355	14 km	820 m

We cannot subtract 355 m from 175 m. Let us borrow 1 km from the 'km' column.

1000 m + 725 m

Worksheet 3

1. Add.

(a) 3 m 52 cm and 8 m 46 cm

(b) 20 m 78 cm and 15 m 70 cm

(c) 12 m 66 cm, 34 m 23 cm and 42 m 35 cm

(d) 7 km 455 m and 9 km 543 m

(e) 72 km 450 m and 43 km 950 m

(f) 25 km 145 m, 43 km 98 m and 35 km 650 m

2. Find the difference.

(a) 8 m 75 cm and 5 m 53 cm

(b) 71 m 96 cm and 17 m 63 cm

(c) 9 m 25 cm and 3 m 44 cm

(d) 23 m 14 cm and 18 m 23 cm

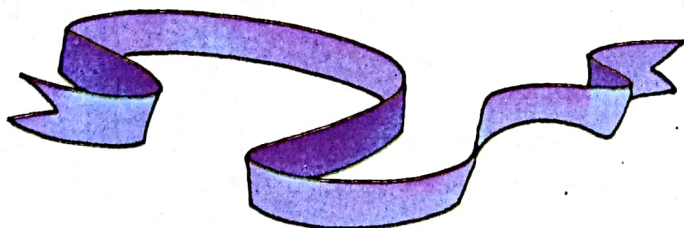
(e) 9 km 200 m and 7 km 450 m

(f) 45 km 525 m and 34 km 614 m

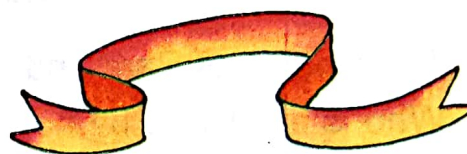
Word Problems

Example 1: Sonu needs 5 m 25 cm of blue ribbon and 2 m 50 cm of red ribbon for her doll. What is the total length of ribbon needed?

Solution:



5 m 25 cm



2 m 50 cm

Here, we add the two lengths to find the total length.

	m	cm
Length of blue ribbon needed	=	5 25
Length of red ribbon needed	=	+ 2 50
Total length of ribbon needed	=	<u>7 m 75 cm</u>

Sonu needs 7 m 75 cm ribbon.

Example 2: A roll of electric wire contains 75 m 50 cm of wire. If 62 m 75 cm of wire is used, how much wire is left on the roll?



Solution:

Here, we subtract two lengths to find out the wire left.

	m	cm	
Total length of wire	=	74 50	→ We borrow 1 m = 100 cm from metres column
Wire used	=	- 62 75	
Wire left	=	<u>12 m 75 cm</u>	

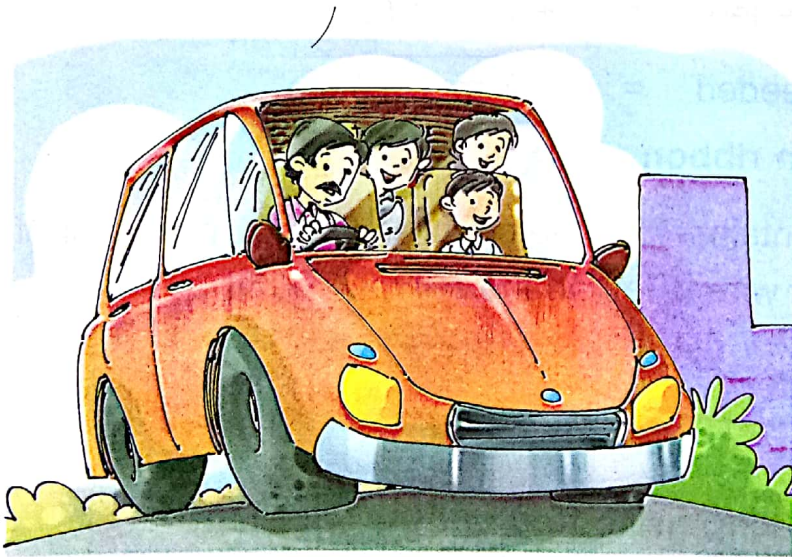
12 m 75 cm of wire is left on the roll.

Worksheet 4

1. Solve the following word problems.

- Neetu bought 3 m 75 cm of cloth for shirt and 2 m 20 cm of cloth for trouser. What is the total length of cloth she bought?
- Amit travelled 15 km 550 m by train, 12 km 400 m by bus and 1 km 250 m by scooter. How much distance did he travel in all?
- Mrs Renu has a ribbon 16 m 75 cm long. She cuts it into two pieces. One piece is 8 m 90 cm. Find the length of the other piece.
- The heights of Ram and Shyam are 1 m 75 cm and 1 m 28 cm respectively. Who is taller and by how much?
- An ant climbed 9 m 50 cm on a wall. Then, it came down 4 m 75 cm along the same wall. How far is the ant from the starting point?

Value Based Question



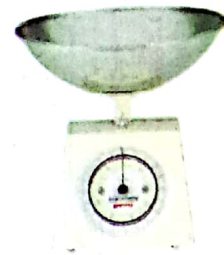
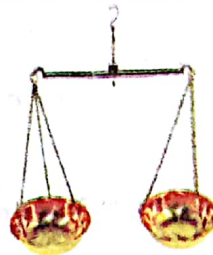
Amit stays in Neelgagan Apartment. His father drops him to school everyday in his car travelling a distance of 9 km 320 m daily. One day his father's friend Mr Kumar visited Amit's house. While conversing, they came to know that his two children Rohan and Sohan also study in Amit's school only. Then they decided to do car pooling.

Now Amit's father has to travel a distance of 1 km 130 m more to pick up Rohan and Sohan and drop the three children to school.

- How much distance will Amit's father travel now for dropping all the children to the school?
- What are the advantages of car pooling?



Do you remember
Gram (g), Kilogram (kg)?



We know:
1 kilogram = 1000 g

We also know:
The standard unit
of weight is **kilogram**.



1. Name any five things sold by a shopkeeper by measuring weight.
2. Which unit will you choose to express the following:

- (a) Weight of an orange.
- (b) Weight of a car.
- (c) Weight of your pencil box.
- (d) Weight of a bag of cement.
- (e) Weight of a gold chain.
- (f) Weight of a sack of oranges.



Do you know?

1 gram = 100 centigrams

1 centigram = 10 milligrams

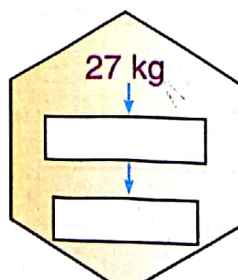
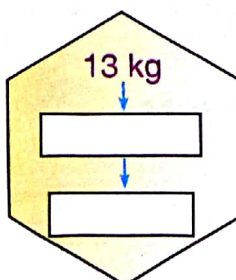
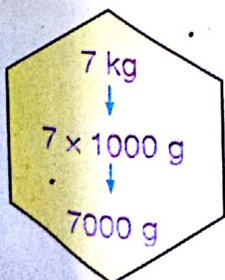
Milligram is the smallest unit
of weight.

CONVERSIONS

Converting bigger unit into smaller unit

1. Converting kilograms into grams

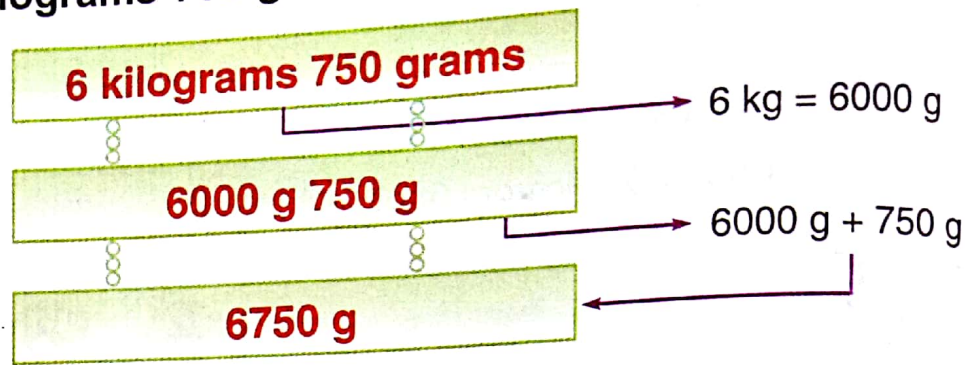
$$1 \text{ kg} = 1000 \text{ g}$$



We multiply the number of
kilograms by 1000 to convert
'kilograms' into 'grams'.

II. Converting kilograms and grams into grams

Let us convert 6 kilograms 750 grams into grams.



We convert the number of 'kilograms' into 'grams' and add to it the number of 'grams'.

Worksheet 1

1. Fill in the blanks.

- (a) 4 kilograms = grams (b) 13 kilograms = grams
(c) 10 kilograms = grams (d) 51 kilograms = grams
(e) 29 kilograms = grams (f) 300 kilograms = grams

2. Convert the following into grams.

- (a) 7 kg 570 g (b) 11 kg 910 g
(c) 23 kg 56 g (d) 74 kg 3 g
(e) 105 kg 75 g (f) 10 kg 10 g
(g) 329 kg 923 g (h) 100 kg 5 g
(i) 3 kg 15 g (j) 24 kg 95 g

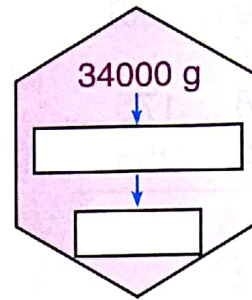
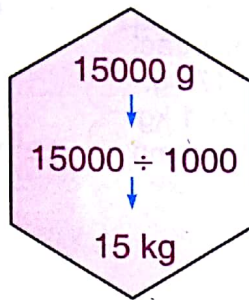
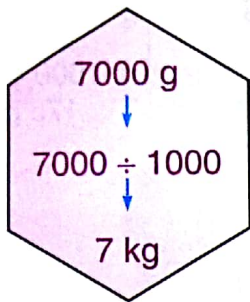
3. State 'True' or 'False'.

- (a) 2 kg 340 g = 2340 g
(b) 6 kg 52 g = 652 g
(c) 190 kg = 19000 g
(d) 61 kg 8 g = 6108 g
(e) 342 kg 9 g = 3429 g

Converting smaller unit into bigger unit

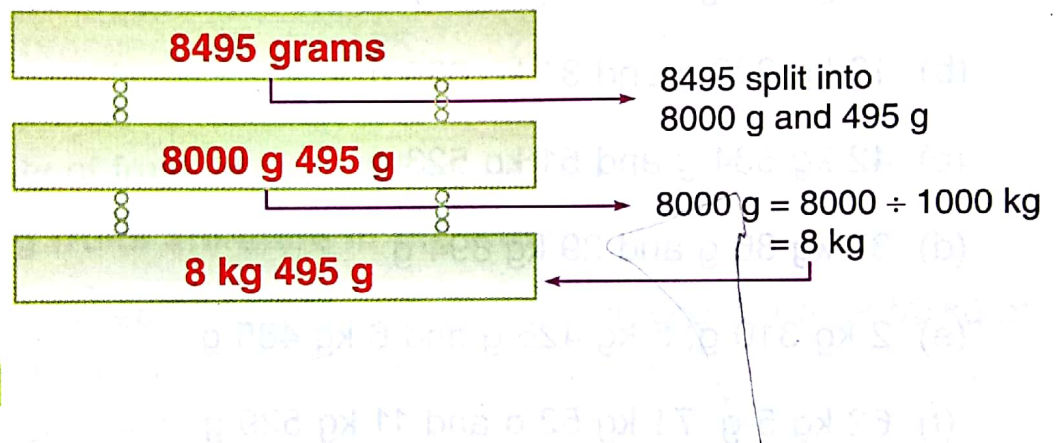
I. Converting grams into kilograms

$$1000 \text{ g} = 1 \text{ kg}$$



We divide the number of grams by 1000 to convert 'grams' into 'kilograms'.

Let us also convert 8495 grams into kilograms and grams.



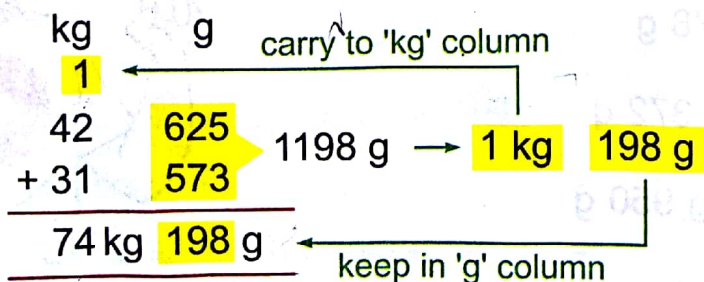
Worksheet 2

1. Convert the following into kilograms and grams.

- | | | | |
|------------|------------|-------------|-------------|
| (a) 2000 g | (c) 5620 g | (e) 9206 g | (g) 10001 g |
| (b) 8000 g | (d) 6005 g | (f) 11035 g | (h) 72565 g |

ADDITION AND SUBTRACTION BY REGROUPING

Let us add 42 kg 625 g and 31 kg 573 g



Similarly, let us find the difference between 12 kg 255 g and 28 kg 175 g

1 kg (1000 g) borrowed from 28 kg

kg	g		kg	g
28	175		27	1175
- 12	255		- 12	255
			15 kg	920 g

1000 g + 175 g

Worksheet 3

1. Add.

- 7 kg 325 g and 9 kg 414 g
- 19 kg 298 g and 31 kg 635 g
- 42 kg 634 g and 51 kg 523 g
- 37 kg 86 g and 29 kg 894 g
- 2 kg 310 g, 5 kg 426 g and 6 kg 485 g
- 62 kg 5 g, 71 kg 52 g and 11 kg 529 g



2. Find the difference.

- 8 kg 475 g and 3 kg 162 g
- 13 kg 95 g and 31 kg 296 g
- 42 kg 675 g and 26 kg 439 g
- 9 kg 439 g and 12 kg 178 g
- 99 kg 561 g and 120 kg 372 g
- 150 kg 750 g and 110 kg 950 g



Word Problems

Example 1: A shopkeeper had 32 kg 500 g of apples, 25 kg 225 g of oranges and 9 kg 710 g of pears in his shop. What is the total quantity of fruits in his shop?

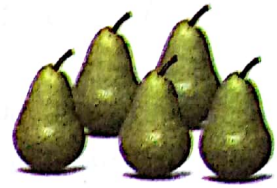
Solution:



32 kg 500 g



25 kg 225 g



9 kg 710 g

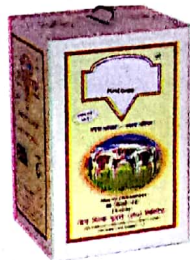
Here, we add all the quantities to get the total quantity.

		kg	g
Quantity of apples	=	32	500
Quantity of oranges	=	25	225
Quantity of pears	=	+ 9	710
Total quantity of fruits	=	<u>67 kg</u>	<u>435 g</u>

67 kg 435 g fruits are there in the shop.

Example 2: John's mother used 28 kg 700 g of ghee out of a container of 50 kg of ghee. How much ghee is left in the container?

Solution:



Ghee container



Ghee used

Here, we subtract the two weights in order to get the ghee that is left in the container.

		kg	g
Total Ghee in the container	=	49	1000
Ghee used	=	- 28	700
Ghee left in the container	=	<u>21 kg</u>	<u>300 g</u>

21 kg 300 g of ghee is left in the container.

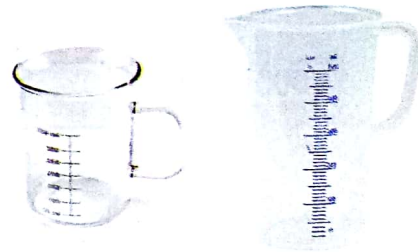
Worksheet 4

1. Solve the following word problems.

- (a) Two baskets contain 8 kg 650 g and 5 kg 550 g of tomatoes. How much is the total quantity of tomatoes?
- (b) A family consumed 40 kg 800 g flour in the month of December, 25 kg 500 g in the month of January and 38 kg 750 g in the month of February. What was the total consumption of flour for the three months?
- (c) In a ration shop, there was 1250 kg 875 g of wheat in the morning. By the end of the day, 1080 kg 250 g of wheat was sold out. By the evening how much wheat was left in the shop?
- (d) The weight of one watermelon is 5 kg 350 g and that of another is 4 kg 750 g. Which watermelon is of more quantity and by how much?



Do you remember
Millilitres (ml), Litres (l)?



We know:
 $1\text{ l} = 1000\text{ ml}$

We also know:
The standard unit
of capacity is **litre**.



1. Name five things which are sold by measuring capacity.

2. Which unit will you choose to express the following:

- | | | |
|---------------------------------|------------------------|------------------------|
| (a) Milk in a cup. | (b) Petrol in a car. | (c) Water in a bottle. |
| (d) Medicine in a small bottle. | (e) Oil in a can. | (f) Ink in an inkpot. |
| (g) Water in a bucket. | (h) Juice in a bottle. | |



Do you know?

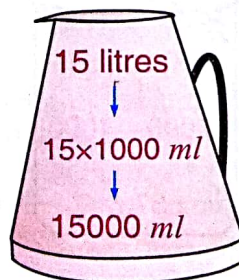
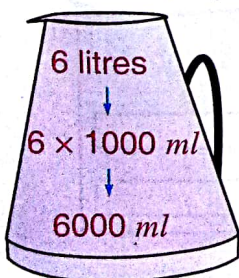
1 kilolitre = 1000 litres
The biggest unit of capacity is **kilolitre**.

CONVERSIONS

Converting bigger unit into smaller unit

I. Converting litres into millilitres

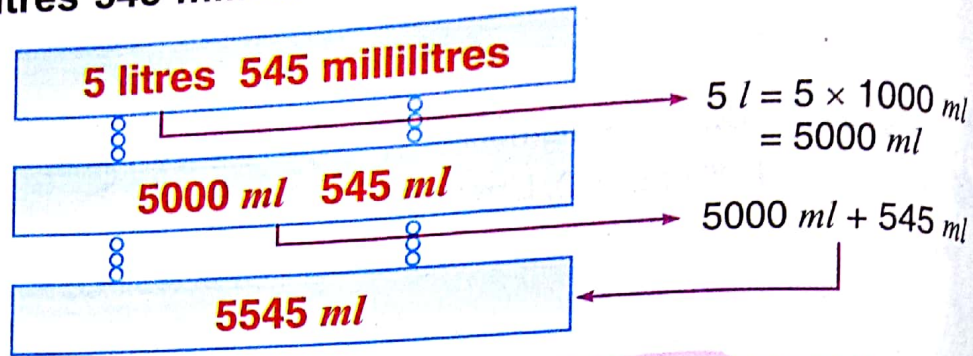
$$1\text{ l} = 1000\text{ ml}$$



We multiply the number of litres by 1000 to convert 'litres' into 'millilitres'.

II. Converting litres and millilitres into millilitres

Let us convert 5 litres 545 millilitres into millilitres.



We convert the number of 'litres' into 'millilitres' and add to it the number of 'millilitres'.

Worksheet 1

1. Convert the following into millilitres.

(a) 7 l

(b) 200 l

(c) 92 l

(d) 8 l 750 ml

(e) 11 l 925 ml

(f) 23 l 65 ml

(g) 215 l 15 ml

(h) 10 l 10 ml

(i) 252 l 525 ml

2. State 'True' or 'False'.

(a) 3 l 430 ml = 3430 ml

(b) 7 l 25 ml = 725 ml

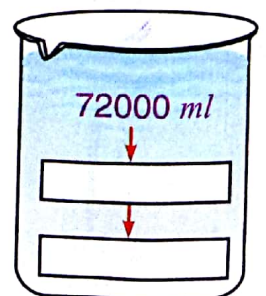
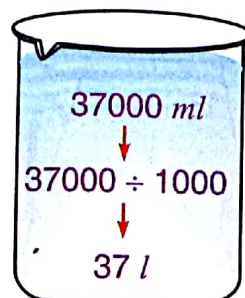
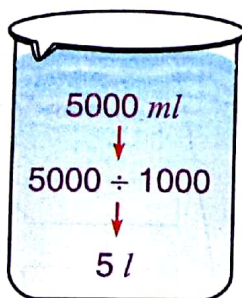
(c) 150 l = 15000 ml

(d) 16 l 8 ml = 1608 ml

Converting smaller unit into bigger unit

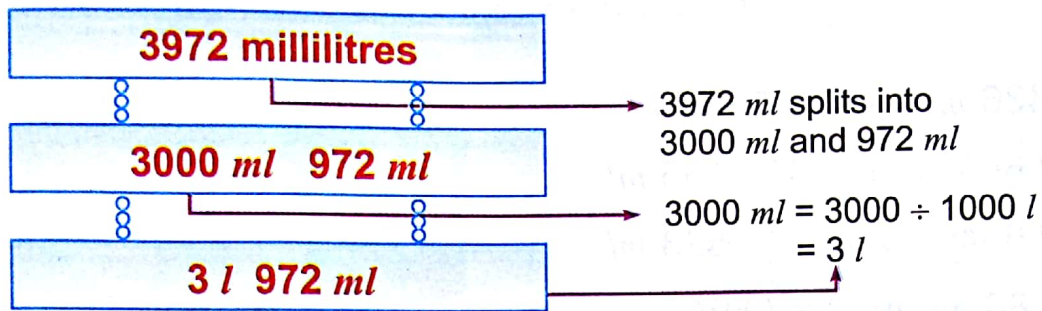
I. Converting millilitres into litres

1000 ml = 1 l



We divide the number of millilitres by 1000 to convert the 'millilitres' into 'litres'.

Let us convert 3972 millilitres into litres.



Worksheet 2

1. Convert the following into litres and millilitres.

- | | | | |
|--------------|-------------|--------------|--------------|
| (a) 9000 ml | (c) 7530 ml | (e) 6902 ml | (g) 10001 ml |
| (b) 74000 ml | (d) 8008 ml | (f) 14098 ml | (h) 91313 ml |

ADDITION AND SUBTRACTION BY REGROUPING

Let us add 95 l 431 ml and 35 l 627 ml.

l	ml	
95	431	
+ 35	627	
<hr/>		
131l	058 ml	

1058 ml → 1l 58 ml

carry to 'l' column

keep in 'ml' column



Similarly, find the difference between 19 l 725 ml and 13 l 914 ml.

1 l (1000 ml) borrowed from 19 l

l	ml	
18	725	
- 13	914	
<hr/>		
5 l	811 ml	

We cannot subtract 914 ml from 725 ml. Let us borrow 1 l from the 'litres' column.

1000 ml + 725 ml

Worksheet 3

1. Add.

- (a) 3 l 436 ml and 7 l 563 ml
- (b) 13 l 685 ml and 31 l 135 ml
- (c) 49 l 634 ml and 94 l 523 ml
- (d) 11 l 86 ml and 29 l 894 ml
- (e) 21 l 310 ml, 38 l 426 ml, 16 l 485 ml
- (f) 60 l 5 ml, 73 l 52 ml and 11 l 529 ml

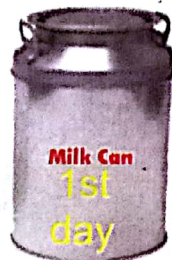
2. Find the difference.

- (a) 6 l 475 ml and 3 l 162 ml
- (b) 15 l 95 ml and 51 l 296 ml
- (c) 36 l 675 ml and 26 l 439 ml
- (d) 9 l 439 ml and 12 l 178 ml
- (e) 156 l 750 ml and 114 l 950 ml
- (f) 99 l 561 ml and 120 l 372 ml

Word Problems

Example 1: A milkman sold 26 l 595 ml of milk on the first day, 35 l 700 ml on the second day and 42 l 560 ml milk on the third day. What total quantity of milk sold on three days?

Solution:



26 l 595 ml



35 l 700 ml



42 l 560 ml

Here, we add all the quantities to get the total quantity.

	l	ml
Quantity of milk sold on first day	26	595
Quantity of milk sold on second day	35	700
Quantity of milk sold on third day	+ 42	560
Total quantity of milk sold	=	<u>104 l 855 ml</u>

104 l 855 ml is the total quantity of milk sold.

Example 2: There was $2\text{ l } 750\text{ ml}$ of oil in a can. Reena used $1\text{ l } 900\text{ ml}$ of oil for cooking. How much oil is left in the can?

Solution:



$2\text{ l } 750\text{ ml}$



$1\text{ l } 900\text{ ml}$

Here, we subtract the two capacities to get the oil left.

		l	ml
Oil in can	=	2	750
Oil used	=	– 1	900
Oil left	=	<u>$0\text{ l } 850\text{ ml}$</u>	

850 ml of oil is left in the can.

Worksheet 4

1. Solve the following word problems.

- Three milkmen are separately carrying $36\text{ l } 250\text{ ml}$, $58\text{ l } 396\text{ ml}$ and $66\text{ l } 324\text{ ml}$ of milk in their containers. Find out what is the total quantity of milk with them.
- A shopkeeper purchased $45\text{ l } 500\text{ ml}$ of mineral water. During the day, he sold out $28\text{ l } 755\text{ ml}$ water. How much mineral water was left with him?
- Raju mixes $2\text{ l } 750\text{ ml}$ of cow's milk in $7\text{ l } 5\text{ ml}$ of buffalow's milk. How much milk did Raju have in all?
- A barrel can hold $29\text{ l } 55\text{ ml}$ of oil. $12\text{ l } 94\text{ ml}$ oil was taken out. What is the remaining quantity of oil in the barrel?
- Ramu's bucket holds $9\text{ l } 350\text{ ml}$ of water and Shalu's bucket holds $8\text{ l } 455\text{ ml}$ of water. Whose bucket holds more water and by how much?

Value Based Question

There was shortage of water in a village of Rajasthan. The authorities decided to provide 15,000 l of water everyday through a tanker. On a particular day, the village received only 13,200 l 500 ml of water. The children who were playing near the tanker, spotted a leakage in the tanker. They informed the authorities and got the tanker repaired. The children spread the message in the village not to waste water and use it in the proper way.



1. How much water was wasted due to leakage in the tanker?
2. Suggest any two ways by which you can avoid wastage of water in your home?

Brain Teasers (Length, Weight, Capacity)

1. Tick (✓) the correct answer.

(a) The unit to measure the length of a railway track is—

- (i) metre (ii) centimetre (iii) kilometre (iv) gram

(b) 3 m 3 cm = _____ cm

- (i) 33 (ii) 303 (iii) 330 (iv) 3300

(c) For a family of three, rice needed for one meal is—

- (i) $4\frac{1}{2}$ kg (ii) 1500 g (iii) $\frac{1}{4}$ kg (iv) 1000 g

(d) Which of the following is not sold by measuring capacity?

- (i) milk (ii) petrol (iii) apples (iv) oil

(e) The smallest unit of weight is—

(i) milligram

(ii) gram

(iii) centimetre

(iv) millimetre

2. Which unit of measurement will you choose to express the following:

(a) Length of a railway track.

(b) Weight of an apple.

(c) Ink in a pen.

(d) Height of a 10-year old boy.

3. Fill in the blanks.

(a) 7 kg = _____ g

(b) 10 m = _____ cm

(c) 72 l = _____ ml

(d) 2 kg 5 g = _____ g

(e) 3 m 3 cm = _____ cm

(f) 9 l 352 ml = _____ ml

(g) 7050 ml = _____ l _____ ml

(h) 325 cm = _____ m _____ cm

(i) 1575 g = _____ kg _____ g

(j) 7 km = _____ m

4. Find the sum of:

(a) 3 kg 520 g, 7 kg 95 g and 11 kg

(b) 11 m 70 cm, 9 m 95 cm and 16 m 2 cm

5. Find the difference of:

(a) 49 kg and 31 kg 286 g

(b) 13 l 479 ml and 9 l 293 ml

6. A basket contained 65 kg 750 g of fruits. Out of which 42 kg 150 g are apples, 9 kg 750 g are pears and the rest are mangoes. Find the weight of mangoes.

7. A tall tower is painted in red, white and black colour. 25 m 50 cm is painted black, 15 m 75 cm is painted red and 10 m 25 cm is painted white. Find the height of the tower.

8. For a family of three, how much of each given item would you buy for one meal? Circle your answer.

Paneer

7 kg

4 kg

600 g

Potatoes

4½ kg

400 g

50 g



CALENDAR 2019

January	February	March	April	May
Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

July	August	September	October	November
Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th Fr Sa
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Do you remember
Time and Calendar?

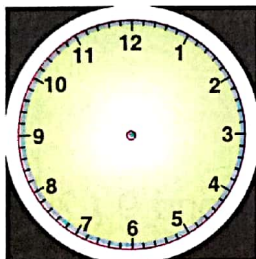
We know
1 hour = 60 minutes
1 year = 12 months



Let us recall Time and Calendar

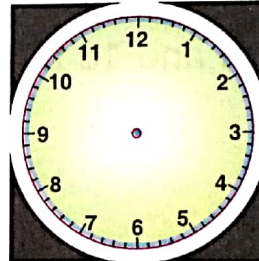
1. Draw the minute and the hour hand of the clock as per the given time.

(a)



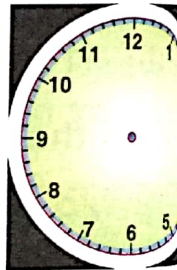
5:00

(b)



9:15

(c)



12:30

2. How many minutes does the minute hand take to move from:

(a) 12 to 5

(b) 12 to 10

(c) 2 to 4

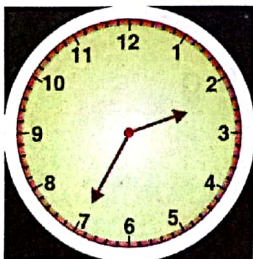
(d) 5 to 11

(e) 7 to 11

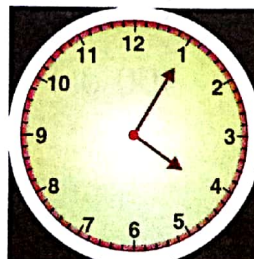
(f) 6 to 1

3. Write the time shown on each clock.

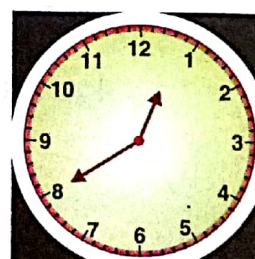
(a)



(b)



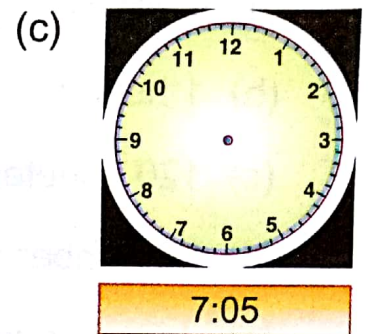
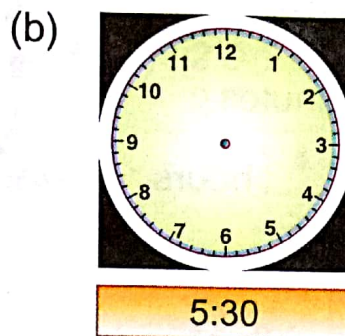
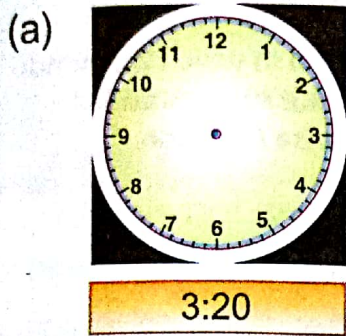
(c)



(d)



4. Draw the hour and minute hand to show the given time.



5. Write as a.m. or p.m.

(a) 7:30 in the morning.

(b) 9:15 in the night.

(c) 1:40 in the afternoon.

(d) 2:25 in the night.

(e) Quarter to 12 at night.

(f) 20 minutes past 10

(g) 11:59 in the morning.

in the morning.

6. Fill in the blanks with a.m. or p.m.

(a) I go to play at 4:00

(b) I go to bed at 10:30

(c) My grandma goes to temple at 7:30 in the morning.

(d) My father listens to T.V. news at 9:00 in the night.

7. How many days are there in a month in which the following important days fall?

(a) Republic day.

(b) Teacher's day.

(c) Christmas.

(d) Independence day.

(e) Children's day.

8. Fill in the blanks.

- 1 day = _____ hours.
- 1 hour = _____ minutes.
- 120 minutes = _____ hours.
- December has _____ days.
- June comes after the month of _____.
- In a year, _____ months have 30 days.



Do you know?

Direction in which the hands of a clock move is called **clockwise direction**.

LEAP YEAR

Look at the calendars of February 2011 and February 2012.

FEB 2011

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

28
days

FEB 2012

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

29
days

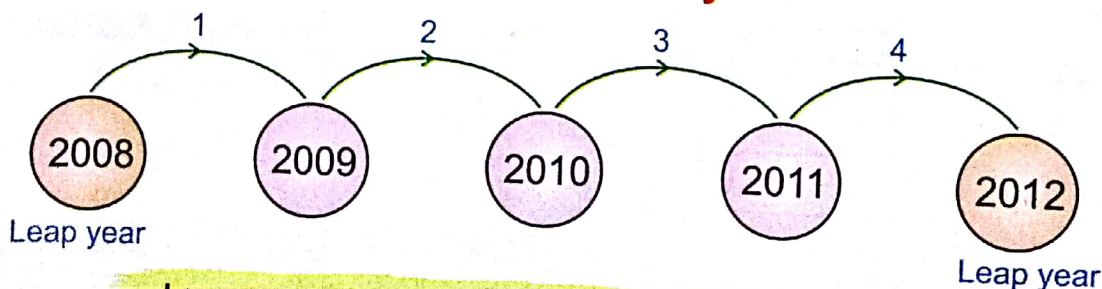
Do you find any difference between them?

February 2011 has 28 days and February 2012 has 29 days.

Remember

February usually has 28 days. Once in four years, February has 29 days. The year in which February has 29 days is called a **Leap Year**.

1 leap year = 366 days



Leap year is the one which is divisible by 4.

But, there are some exceptions to it. If it is a centurial year like 1600, 1700, 1800, 1900, 2000 then it will be a leap year only if it is divisible by 400.

Is 2014 a leap year?

See, the remainder is not equal to zero.

2014 is not divisible by 4, so, it is not a leap year.

$$\begin{array}{r} 503 \\ 4 \overline{) 2014} \\ \underline{- 20} \\ 14 \\ \underline{- 12} \\ 2 \end{array} \leftarrow \text{Remainder}$$

Worksheet 1

1. Which of the following are leap years?

- (a) 1992 (b) 1983 (c) 2000 (d) 1999

2. Answer the following:

- (a) Is the year in which India got independence a leap year?
(b) Is your year of birth a leap year?
(c) How many days are there in a leap year?
(d) How many days are there in the month of February in a leap year?

TIME IN MINUTES AND SECONDS

Do you know that the third hand in a clock shows seconds?

The seconds hand moves very fast. Second is the **smallest** unit of time.

Observe the relations

60 seconds	=	1 minute
60 minutes	=	1 hour
24 hours	=	1 day
7 days	=	1 week
12 months	=	1 year



Remember

There are 52 weeks in a year.
There are 365 days in a year.
There are 366 days in a leap year.
1 decade = 10 years
1 century = 100 years

Worksheet 2

1. Answer the following:

-
- A yellow and brown pendulum clock with a blue face and black numbers. The clock is shown from a slightly low angle, emphasizing its height. The pendulum is visible at the bottom.

ADDITION (WITH REGROUPING)

Example 1: Add 4 hours 30 minutes and 2 hours 55 minutes.

Solution:

Diagram illustrating the addition of time:

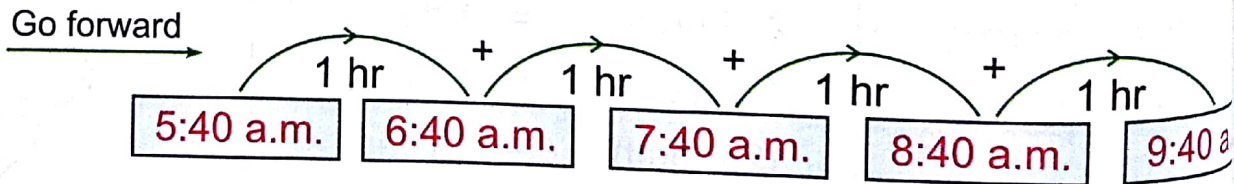
hrs	min
4	30
+ 2	55
<hr/>	
7	25
<hr/>	

Annotations:

- A bracket connects 30 min and 55 min to 85 min.
- An arrow points from 85 min to an oval containing 1 hr 25 min.
- An arrow points from the oval to the 1 in the hours column of the result.
- An arrow points from the oval to the 25 in the minutes column of the result.

Example 2: What time will it be 4 hours after 5:40 a.m.?

Solution:



To get the time, we add 4 hours to 5 hours 40 minutes.

$$\begin{array}{r} \text{hrs} \quad \text{min} \\ 5 \quad 40 \\ + 4 \quad 00 \\ \hline 9 \text{ hrs } 40 \text{ min} \end{array}$$

The time will be 9:40 a.m.

Worksheet 3

1. Find the sum.

- (a) 2 hrs 10 min and 3 hrs 25 min
- (c) 1 hr 35 min and 9 hrs 25 min
- (e) 3 hrs 50 min and 5 hrs 50 min

- (b) 4 hrs 5 min and 5 hrs 45 min
- (d) 7 hrs 49 min and 8 hrs 50 min
- (f) 5 hrs 15 min and 5 hrs 55 min

2. What time will it be?

- (a) 2 hrs after 3:30 a.m.
- (b) 5 hrs after 7:10 a.m.

- (c) 3 hrs 10 min after 1:25 a.m.
- (d) 4 hrs 25 minutes after 7:30 a.m.

SUBTRACTION (WITH REGROUPING)

Example 1: Let us find the difference between 5 hrs 10 min and 2 hrs 40 min.

Solution:

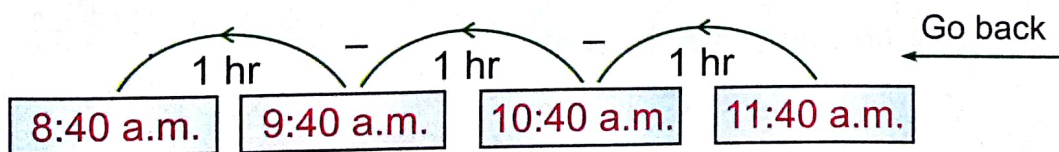
hrs	min
4	70
5	10
2	40
<hr/>	
2 hrs	30 min

60 + 10

We cannot subtract
40 min from 10 min.
We shall borrow
1 hr (60 min) from 5 hrs.

Example 2: What time will it be 3 hours before 11:40 a.m.?

Solution:



In order to get the time, we subtract 3 hours from 11 hours 40 minutes.

hrs	min
11	40
- 3	00
<hr/>	
8 hrs	40 min

The time will be 8:40 a.m.

Worksheet 4

1. Find the difference between:

- (a) 4 hrs 30 min and 5 hrs 50 min
- (b) 7 hrs 45 min and 9 hrs 50 min

- (c) 3 hrs 35 min and 6 hrs 15 min
- (d) 5 hrs 45 min and 7 hrs 20 min

2. What time will it be:

- (a) 2 hrs before 3:30 a.m.?
- (c) 2 hrs before 11:05 p.m.?

- (b) 4 hrs before 7:10 a.m.?
- (d) 3 hrs before 6:20 p.m.?

Word Problems

Example 1: Amit travels 3 hrs 30 min by bus and 1 hr 10 min by taxi to reach his town. How long does he take to reach his town?

Solution: Here, we have to calculate the total time he travelled by bus and taxi.

	hrs	min
Time taken to travel by bus	= 3	30
Time taken to travel by taxi	= + 1	10
Total time taken	=	<u>4 hrs 40 min</u>

Amit takes 4 hours 40 minutes to reach his town.

Example 2: Deepa's school starts at 8:10 a.m. and closes at 12:30 p.m. For how many hours does the school work?

Solution: Here, we need to find the interval between 8:10 a.m. and 12:30 p.m.

Starting time = 8:10 a.m.

Closing time = 12:30 p.m.

Time duration =

	hrs	min
	12	30
-	8	10
	<u>4 hrs</u>	<u>20 min</u>

The school works for 4 hrs 20 minutes.

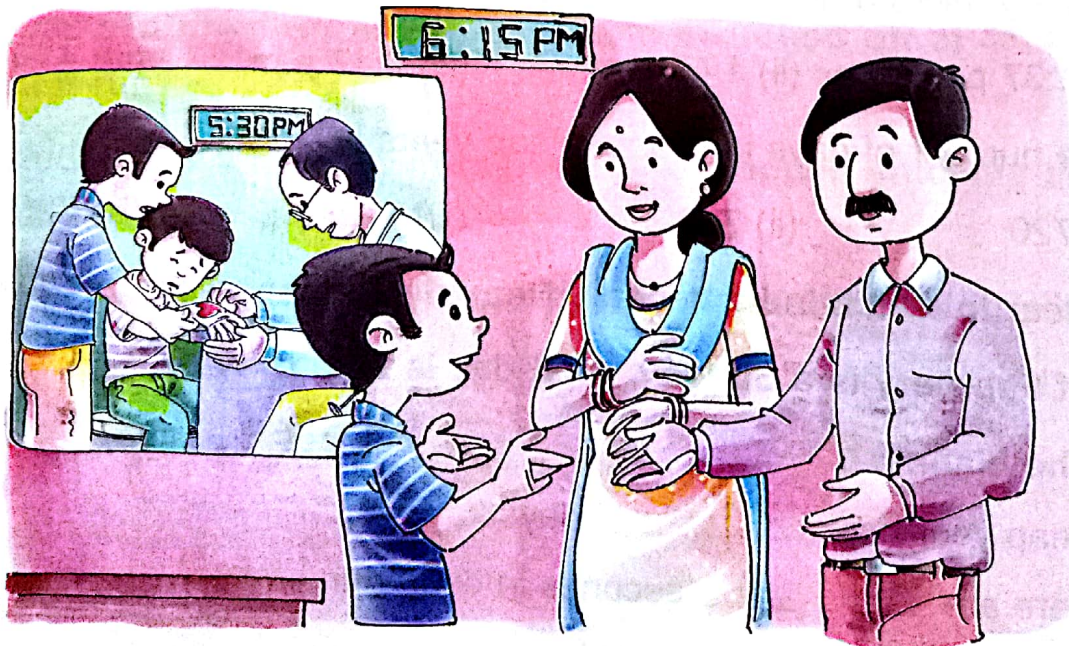
Worksheet 5

1. Solve the following word problems.

- (a) A film-show starts at 8:30 p.m. It lasts for 2 hrs 20 minutes. At what time does it end?
- (b) Mr Raj leaves for office at 7:45 a.m. He reaches there after 1 hr 10 min. At what time did he reach there?
- (c) Sheela studies Hindi for 1 hr 40 min and Mathematics for 2 hrs 15 min. How long does she study?
- (d) My mother went for shopping at 10:10 a.m. She returned at 11:55 a.m. For how long did she do shopping?
- (e) Amit watched hockey match with his friends for 1 hr 20 min. If the match ended at 10:35 a.m., at what time did it start?
- (f) The T.V. news started at 7:30 a.m. and it ended at 8:05 a.m. For how long did the T.V. news last?

Value Based Question

Everyday Rohan goes to play in a nearby park at 4:15 p.m. He plays for 1 hr 30 min. One day, he saw a child badly hurt while playing on the slide. He took him to



the doctor. Rohan then dropped the child at his home. The child's parents were thankful to Rohan for his timely help. Due to this, he was late and reached home at 6:15 p.m. He told his parents about the incident and they were proud of him.

1. At what time normally does Rohan come back from park after playing?
2. By how many minutes did Rohan reach late at home?
3. In what ways can you offer help to an injured person?

Brain Teasers

1. Tick (✓) the correct answer.

(a) 3 hrs 33 min = _____ min

(i) 333

(ii) 213

(iii) 180

(iv) 210

(b) Today is Monday. After 61 days, it will be—

(i) Wednesday

(ii) Saturday

(iii) Tuesday

(iv) Thursday

(c) Which of the following months has 30 days?

(i) July

(ii) December

(iii) October

(iv) April

(d) A train leaves Delhi at 12:05 p.m. At what time will it reach Agra, if the journey takes 3 hours 42 minutes?

(i) 1:37 p.m.

(ii) 1:47 p.m.

(iii) 3:47 p.m.

(iv) 4:37 p.m.

(e) The number of days in two non-leap years is—

(i) 720

(ii) 732

(iii) 722

(iv) 730

2. Is the year in which India became Republic, a leap year?

3. If 4th of February is a Sunday, what day is 25th of February?

4. Fill in the blanks.

(a) A leap year has _____ days.

(b) There are _____ seconds in one hour.

(c) The shortest month of a year is _____

- (d) 5 hours = _____ minutes.
- (e) 3 hours 35 minutes = _____ minutes.
- (f) 1 century = _____ years.
- (g) 180 minutes = _____ hours.
- (h) 3 hours after 5 p.m. is _____.
- (i) 2 hours before 9 a.m. is _____.
- (j) 2 hrs 20 min after 3:30 a.m. is _____.
- (k) 4 hours 5 minutes before 10:40 a.m. is _____.

5. Find the sum.

- (a) 3 hrs 15 min and 5 hrs 20 min
- (b) 6 hrs 47 min and 45 min

6. Find the difference between:

- (a) 6 hrs 40 min and 5 hrs 5 min
- (b) 3 hrs 47 min and 55 min

7. What time was it 3600 seconds before 12 midnight?

8. What time will it be 3600 seconds after 11 a.m.?

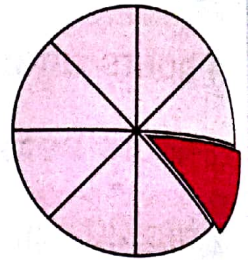
9. A T.V. was switched on at 7:30 p.m. and switched off at 11:45 p.m. How long did it run?

10. Renu studied for 1 hour 25 minutes. If she stopped studying at 8:30 p.m., when did she start studying?

11. Find the names of the famous personalities whose date of birth is 29 February.

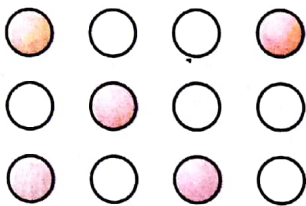


Do you remember fractions?



Let us solve some problems.

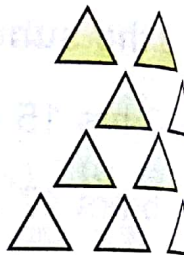
1. Write fraction for the shaded part of each group.



(a)

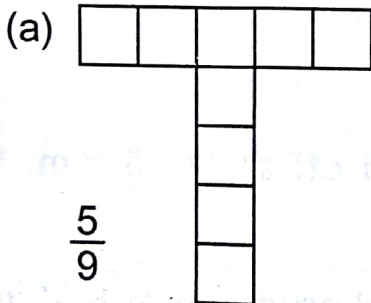


(b)

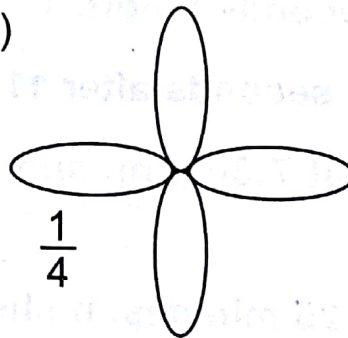


(c)

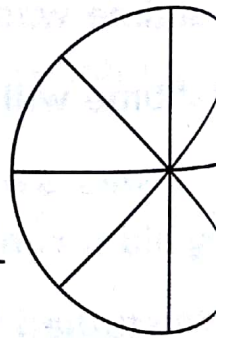
2. Shade the figure according to the given fraction.



(b)



(c)



3. Complete the table.

	Numerator	Denominator	Fraction
(a)	5	8	<input type="text"/>
(b)	3	17	<input type="text"/>
(c)	6	<input type="text"/>	$\frac{6}{10}$
(d)	<input type="text"/>	4	$\frac{1}{4}$

4. Compare using '<', '>', '='.

(a) $\frac{4}{3}$ ○ $\frac{7}{3}$

(b) $\frac{1}{8}$ ○ $\frac{1}{8}$

(c) $\frac{13}{17}$ ○ $\frac{5}{17}$

(d) $\frac{3}{10}$ ○ $\frac{3}{10}$

5. Solve the following:

(a) $\frac{4}{9} + \frac{1}{9}$

(b) $\frac{2}{11} + \frac{5}{11} + \frac{3}{11}$

(c) $\frac{7}{8} - \frac{2}{8}$

(d) $\frac{13}{17} - \frac{9}{17}$

(e) $\frac{4}{10} + \frac{3}{10} + \frac{1}{10}$

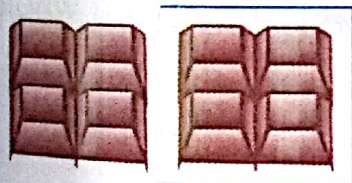
(f) $\frac{15}{13} - \frac{3}{13}$

EQUIVALENT FRACTIONS

I have 3 chocolate bars.
I cut them in three different ways
and shared with my three friends.



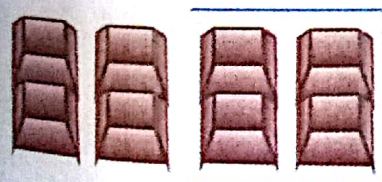
Monu gets



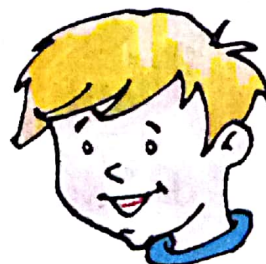
$$\frac{1}{2}$$



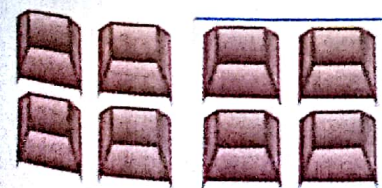
Sonu gets



$$\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$$



Renu gets



$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{4}{8}$$





How much of each chocolate bar does each one get?

Each one gets half of the chocolate bar.



We have only given different names $\left(\frac{1}{2}, \frac{2}{4}, \frac{4}{8}\right)$ for the equal parts each gets.

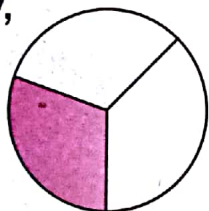
Thus, $\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$.

The fractions which have the same value are called **Equivalent Fractions**.

Remember

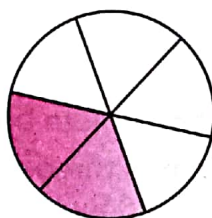
Fractions which express the same part of a whole but have different names are called **Equivalent Fractions**.

Similarly,



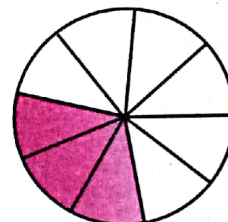
$$\frac{1}{3}$$

=



$$\frac{2}{6}$$

=

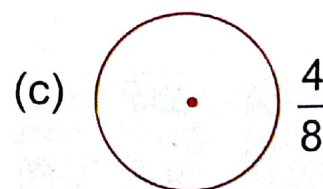
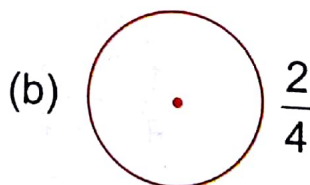
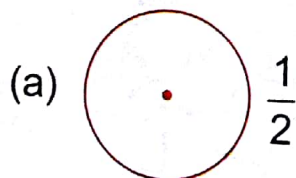


$$\frac{3}{9}$$

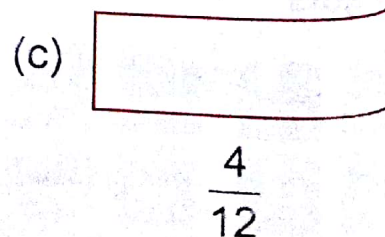
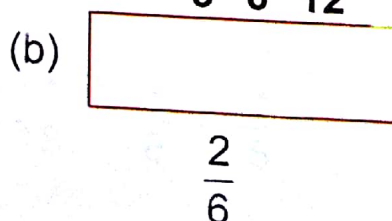
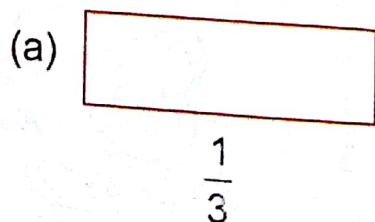
$\frac{1}{3}, \frac{2}{6}, \frac{3}{9}$ are equivalent fractions because they represent the same part of a whole.

Worksheet 1

1. Represent the equivalent fractions $\frac{1}{2}, \frac{2}{4}, \frac{4}{8}$ in the given figures.

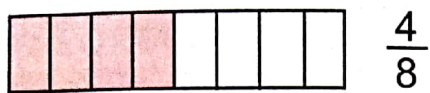
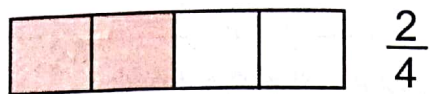
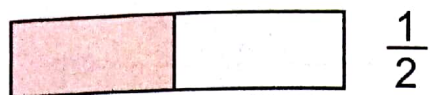


2. Represent the equivalent fractions $\frac{1}{3}, \frac{2}{6}, \frac{4}{12}$ in the given figures.



EQUIVALENT FRACTIONS FROM A GIVEN FRACTION

We know that—



$$\frac{1}{2} = \frac{2}{4} = \frac{4}{8}$$

$$\frac{1}{2} \xrightarrow{\times 2} \frac{2}{4} \xrightarrow{\times 2} \frac{4}{8}$$

Remember

When we multiply the numerator and denominator of a fraction by the same number other than 0 and 1, we get an Equivalent Fraction.

Similarly,

$$\frac{3}{4} \xrightarrow{\times 3} \frac{9}{12}$$

$$\frac{2}{5} \xrightarrow{\times 4} \frac{8}{20}$$

$$\frac{3}{10} \xrightarrow{\times 5} \frac{15}{50}$$

Worksheet 2

1. Encircle the equivalent fractions in each set of fractions.

(a) $\frac{1}{2} : \frac{2}{4} \quad \frac{5}{8} \quad \frac{6}{12} \quad \frac{9}{10} \quad \frac{3}{6}$

(b) $\frac{2}{3} : \frac{4}{6} \quad \frac{7}{13} \quad \frac{8}{12} \quad \frac{10}{12} \quad \frac{10}{15}$

(c) $\frac{1}{4} : \frac{2}{8} \quad \frac{2}{3} \quad \frac{3}{12} \quad \frac{5}{20} \quad \frac{3}{8}$

(d) $\frac{5}{7} : \frac{6}{14} \quad \frac{10}{14} \quad \frac{55}{77} \quad \frac{30}{45} \quad \frac{20}{28}$

2. Tick (✓) the equivalent fractions.

(a) $\frac{2}{3}, \frac{8}{12}$ ☐

(b) $\frac{3}{4}, \frac{9}{16}$ ☐

(c) $\frac{5}{6}, \frac{10}{18}$ ☐

(d) $\frac{11}{12}, \frac{33}{36}$ ☐

(e) $\frac{15}{16}, \frac{30}{36}$ ☐

(f) $\frac{17}{20}, \frac{85}{100}$ ☐

3. Write the next four equivalent fractions for each.

- (a) $\frac{1}{3}$, $\frac{2}{6}$, $\frac{3}{9}$, _____, _____, _____, _____
- (b) $\frac{2}{5}$, $\frac{4}{10}$, $\frac{6}{15}$, _____, _____, _____, _____
- (c) $\frac{6}{10}$, $\frac{12}{20}$, $\frac{18}{30}$, _____, _____, _____, _____
- (d) $\frac{3}{9}$, $\frac{6}{18}$, $\frac{9}{27}$, _____, _____, _____, _____

4. Write three equivalent fractions for each.

- (a) $\frac{1}{7}$ (b) $\frac{5}{8}$ (c) $\frac{9}{11}$ (d) $\frac{10}{13}$ (e) $\frac{8}{15}$ (f) $\frac{1}{25}$

MISSING NUMERATOR OR DENOMINATOR OF EQUIVALENT FRACTIONS

Let us find the missing numerator in $\frac{3}{7} = \frac{\square}{14}$

$$\frac{3}{7} \xrightarrow{\times 2} \frac{6}{14}$$

14 is 2 times 7

So, the missing numerator must be 2 times 3

$$2 \times 3 = 6$$

Similarly, the missing denominator of $\frac{5}{9} = \frac{30}{\square}$

$$\frac{5}{9} \xrightarrow{\times 6} \frac{30}{54}$$

30 is 6 times 5

So, the missing denominator must be 6 times 9

$$6 \times 9 = 54$$

Now, let us find the missing denominator in $\frac{30}{45} = \frac{6}{\square}$

$$\frac{30}{45} \xrightarrow{\div 5} \frac{6}{9}$$

$$30 \div 5 = 6$$

So, we divide 45 by 5

$$45 \div 5 = 9$$

Worksheet 3

1. Find the missing numerator or denominator.

(a) $\frac{1}{2} = \frac{\square}{4}$

(b) $\frac{4}{6} = \frac{\square}{18}$

(c) $\frac{7}{9} = \frac{42}{\square}$

(d) $\frac{3}{5} = \frac{2}{\square}$

(e) $\frac{12}{15} = \frac{\square}{75}$

(f) $\frac{27}{30} = \frac{9}{\square}$

(g) $\frac{45}{81} = \frac{\square}{9}$

(h) $\frac{20}{60} = \frac{\square}{\square}$

2. Find the equivalent fractions of $\frac{1}{3}$ with—

(a) Numerator 5

(b) Denominator 18

(c) Numerator 11

3. Change $\frac{5}{9}$ into an equivalent fraction with denominator 54.

4. Change $\frac{20}{28}$ into an equivalent fraction with numerator 5.

CHECK FOR EQUIVALENCE OF TWO FRACTIONS

Let us see if $\frac{2}{3}$ is equivalent to $\frac{10}{15}$

$$\frac{2}{3} \times \frac{10}{15}$$

Cross product of $2 \times 15 = 30$
Cross product of $3 \times 10 = 30$ } They are same.

$$\text{So, } \frac{2}{3} = \frac{10}{15}$$

Remember

If cross products of numerator of one and denominator of the other fraction are same, the two fractions are equivalent.

Worksheet 4

1. Find if the following pairs of fractions are equivalent.

(a) $\frac{1}{3}$ and $\frac{3}{9}$

(d) $\frac{3}{7}$ and $\frac{24}{56}$

(g) $\frac{2}{9}$ and $\frac{18}{81}$

(b) $\frac{2}{5}$ and $\frac{8}{25}$

(e) $\frac{1}{10}$ and $\frac{1}{40}$

(h) $\frac{15}{16}$ and $\frac{30}{48}$

(c) $\frac{10}{15}$ and $\frac{2}{3}$

(f) $\frac{3}{4}$ and $\frac{75}{100}$

(i) $\frac{7}{11}$ and $\frac{49}{77}$

2. Write 'True' or 'False' for the following:

(a) $\frac{7}{8} = \frac{35}{40}$ ☐

(b) $\frac{1}{5} = \frac{8}{50}$ ☐

(c) $\frac{11}{13} = \frac{22}{26}$ ☐

(d) $\frac{25}{30} = \frac{5}{6}$ ☐

(e) $\frac{100}{700} = \frac{10}{70}$ ☐

(f) $\frac{12}{9} = \frac{9}{12}$ ☐

TYPES OF FRACTIONS

I. Like and Unlike Fractions

See us! We have the same denominator i.e. 10.
We are called **Like fractions** because our denominators are alike.

$$\frac{2}{10} \quad \frac{13}{10} \quad \frac{7}{10} \quad \frac{25}{10} \quad \frac{1}{10} \quad \frac{19}{10} \quad \frac{22}{10} \quad \frac{9}{10} \quad \frac{7}{10} \quad \frac{15}{10} \quad \frac{6}{10}$$

Fractions having the same denominators are called **Like Fractions**.

We have different denominators.
We are called **Unlike fractions** because our denominators are not alike.

$$\frac{3}{5} \quad \frac{1}{3} \quad \frac{6}{8} \quad \frac{7}{2} \quad \frac{8}{11} \quad \frac{5}{6}$$

Fractions having different denominators are called **Unlike Fractions**.

II. Proper and Improper Fractions

$$\frac{1}{3}, \frac{2}{3}, \frac{5}{7}$$

Look at us. Our numerators are smaller than our denominators.

Fractions, where numerators are smaller than denominators are called **Proper Fractions**.

Remember

Value of a proper fraction is always less than 1. $\frac{1}{3} < 1$ $\frac{2}{3} < 1$

$$\frac{4}{3}, \frac{5}{2}, \frac{6}{5}$$

Look at us. Our numerators are greater than denominators.

Fractions, where numerators are greater than denominators are called **Improper Fractions**.

Remember

An improper fraction is always **greater than 1**. $\frac{4}{3} > 1$

Remember

If the numerator is **equal to** the denominator, then, the fraction represents the number one. $\frac{4}{4} = 1$

III. Unit Fractions

$$\frac{1}{9}, \frac{1}{15}, \frac{1}{2}, \frac{1}{11}, \frac{1}{21}, \frac{1}{75}, \frac{1}{8}, \frac{1}{5}$$

See, we all have 1 in numerator.

Fractions having 1 in the numerator are called **Unit Fractions**.

IV. Mixed Numbers

Let us take a fraction $\frac{7}{4}$. It is an improper fraction.

$\frac{7}{4}$ can be written as:

$$\frac{7}{4} = \frac{4}{4} + \frac{3}{4}$$

or

$$\frac{7}{4} = 1 + \frac{3}{4} = 1\frac{3}{4}$$

$$\frac{4}{4} = 1$$



$$\frac{3}{4} =$$



Numbers we use for counting are called **Natural Numbers**.

Improper fraction written as a combination of a natural number and a proper fraction is called a **Mixed Number**.

$2\frac{3}{4}$, $1\frac{1}{2}$, $8\frac{1}{5}$, $10\frac{1}{10}$ are all mixed numbers.

Worksheet 5

1. Tick (✓) the set of like fractions.

(a) $\frac{5}{6}, \frac{3}{5}, \frac{6}{9}$ ☐

(b) $\frac{1}{7}, \frac{5}{7}, \frac{9}{7}$ ☐

(c) $\frac{3}{5}, \frac{7}{9}, \frac{3}{2}$ ☐

2. Encircle all proper fractions.

$\frac{4}{3}, \frac{8}{11}, \frac{7}{6}, \frac{7}{8}, \frac{10}{9}, \frac{9}{10}, \frac{25}{10}, \frac{12}{15}, \frac{6}{5}$

3. Encircle all improper fractions.

$\frac{11}{7}, \frac{20}{30}, \frac{35}{25}, \frac{15}{18}, \frac{81}{72}, \frac{93}{95}, \frac{15}{12}, \frac{49}{51}, \frac{1}{11}$

4. Encircle the unit fractions.

$\frac{5}{7}, \frac{1}{8}, \frac{1}{9}, \frac{8}{13}, \frac{15}{7}, \frac{1}{11}, \frac{0}{1}, \frac{1}{36}$

5. Fill in the blanks.

- (a) A fraction whose numerator is less than its denominator is called _____ fraction.
- (b) In an improper fraction, the numerator will be _____ than denominator.
- (c) Fraction whose numerator is one is called a _____ fraction.
- (d) Fraction whose numerator is equal to its denominator represents number _____.
- (e) A combination of a natural number and a proper fraction is called _____ number.
- (f) An improper fraction is _____ than 1.
- (g) A proper fraction is _____ than 1.

6. Encircle the mixed numbers.

(a) $1\frac{1}{7}$

(b) $\frac{3}{8}$

(c) $6\frac{1}{3}$

(d) $\frac{15}{7}$

(e) $3\frac{2}{7}$

(f) $\frac{7}{15}$

7. Which of the following can be written as mixed numbers?

(a) $\frac{5}{3}$

(b) $\frac{7}{9}$

(c) $\frac{11}{5}$

(d) $\frac{24}{9}$

(e) $\frac{6}{6}$

(f) $\frac{13}{15}$

(g) $\frac{25}{10}$

(h) $\frac{32}{13}$

FRACTION AS DIVISION

Mona has 4 apples.
She distributes these
apples equally among
2 of her friends.

Each gets 2 apples.
($4 \div 2$)

If Mona has
2 apples to distribute
equally among
2 of her friends.

Each gets 1 apple.
($2 \div 2$)

If Mona has
1 apple to distribute
equally among
2 of her friends.

Each gets $\frac{1}{2}$ apple.
($1 \div 2$)

Thus, a fraction can be expressed as a division sum.

Similarly, $\frac{7}{5} = 7 \div 5$ and $\frac{9}{5} = 9 \div 5$

Worksheet 6

1. Express as a division sum.

(a) $\frac{15}{3}$

(b) $\frac{5}{2}$

(c) $\frac{13}{6}$

(d) $\frac{23}{18}$

(e) $\frac{7}{6}$

(f) $\frac{0}{5}$

2. Express as a fraction.

(a) $9 \div 5$

(c) $21 \div 7$

(e) $7 \div 3$

(b) $15 \div 4$

(d) $25 \div 12$

(f) $35 \div 15$

CHANGING FRACTIONS

I. Improper fraction into mixed number

We know that $\frac{14}{5}$ can be written as division sum, $14 \div 5$

$$\begin{array}{r} 2 \leftarrow \text{Natural number part} \\ \text{Divisor} \rightarrow 5 \overline{) 14} \\ \underline{- 10} \\ 4 \leftarrow \text{Remainder} \end{array}$$

$$\frac{14}{5} = 2 \frac{4}{5}$$

Remainder
Divisor

Natural number part

Similarly,

$$\begin{array}{r} 3 \leftarrow \text{Natural number part} \\ \text{Divisor} \rightarrow 9 \overline{) 35} \\ \underline{- 27} \\ 8 \leftarrow \text{Remainder} \end{array}$$

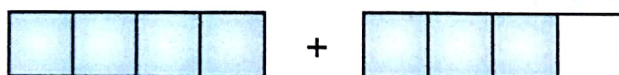
$$\frac{35}{9} = 3 \frac{8}{9}$$

Remainder
Divisor

Natural number part

II. Mixed number into improper fraction

Let us represent $1 \frac{3}{4}$ by figures.



$$\frac{4}{4} \text{ or } 1 + \frac{3}{4}$$

$$\frac{4}{4} + \frac{3}{4} = \frac{4+3}{4} = \frac{7}{4} \quad (\text{Improper fraction})$$

$$1 \frac{3}{4} \quad 1 \times 4 = 4 \quad (\text{Natural number part} \times \text{Denominator})$$

$$1 \frac{3}{4} \quad 4 + 3 = 7 \quad (\text{Natural number part} \times \text{Denominator}) + \text{Numerator}$$

$$\frac{7}{4} \quad \frac{(\text{Natural number part} \times \text{Denominator}) + \text{Numerator}}{\text{Denominator}}$$

Worksheet 7

1. Change into mixed number.

(a) $\frac{4}{3}$

(b) $\frac{41}{10}$

(c) $\frac{11}{4}$

(d) $\frac{29}{6}$

(e) $\frac{7}{5}$

(f) $\frac{50}{9}$

(g) $\frac{68}{11}$

(h) $\frac{74}{15}$

(i) $\frac{54}{7}$

2. Change into improper fraction.

(a) $2\frac{1}{3}$

(b) $6\frac{1}{4}$

(c) $1\frac{4}{9}$

(d) $33\frac{1}{3}$

(e) $10\frac{1}{10}$

(f) $7\frac{5}{6}$

(g) $12\frac{3}{7}$

(h) $9\frac{1}{9}$

(i) $4\frac{7}{8}$

Brain Teasers

1. Tick (✓) the correct answer.

(a) Which of the following is a proper fraction?

(i) $\frac{17}{19}$

(ii) $\frac{15}{14}$

(iii) $\frac{13}{9}$

(iv) $\frac{18}{17}$

(b) Fraction whose numerator is greater than the denominator is called _____ fraction.

(i) unit

(ii) proper

(iii) improper

(iv) mixed

(c) $7\frac{1}{5}$ written as an improper fraction is—

(i) $\frac{5}{36}$

(ii) $\frac{36}{5}$

(iii) $\frac{71}{5}$

(iv) $\frac{5}{71}$

(d) Tick (✓) the missing numerator in $\frac{3}{13} = \frac{\boxed{}}{78}$

(i) 10

(ii) 18

(iii) 8

(iv) 38

(e) Which of the following is not equivalent to $\frac{3}{7}$?

(i) $\frac{6}{14}$

(ii) $\frac{30}{70}$

(iii) $\frac{12}{20}$

(iv) $\frac{15}{35}$

2. Fill in the blanks.

(a) $\frac{5}{6}$ is a _____ fraction.

(b) $3\frac{1}{7}$ is a _____ number.

(c) $\frac{19}{7}$ is an _____ fraction.

(d) $\frac{1}{8}$, $\frac{1}{3}$ and $\frac{1}{16}$ are _____ fractions.

(e) Fractions whose denominators are same are called _____ fractions.

3. Write the next three equivalent fractions.

(a) $\frac{2}{6}$, $\frac{4}{12}$, $\frac{6}{18}$, _____, _____, _____

(b) $\frac{1}{8}$, $\frac{2}{16}$, $\frac{3}{24}$, _____, _____, _____

4. Find the missing numerator or denominator.

(a) $\frac{8}{9} = \frac{\boxed{}}{72}$

(b) $\frac{5}{6} = \frac{50}{\boxed{}}$

(c) $\frac{45}{54} = \frac{5}{\boxed{}}$

(d) $\frac{39}{65} = \frac{\boxed{}}{5}$

5. Complete the pattern:

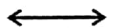
(a) $\frac{1}{4}$, $\frac{1}{16}$, $\frac{1}{64}$, _____, _____

(b) 1, $\frac{2}{3}$, $\frac{4}{9}$, $\frac{8}{27}$, _____, _____



Do you remember
Point, Line, Ray, Line segment?

1. Identify the following as ray, line or line segment.

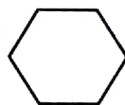


- (a) (b) (c) (d) (e) (f)

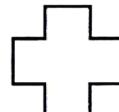
2. How many line segments are there in each?



(a)



(b)



(c)



(d)

3. Match the following:

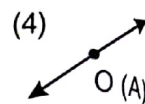
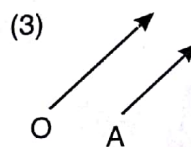
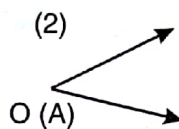
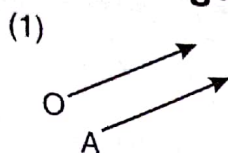
- | | |
|------------------------------|----------------|
| • A line segment has | one end point |
| • \rightarrow represents a | no end points |
| • A ray has | two end points |
| • A line segment is a part | ray |
| • A line has | measured |
| • A line segment can be | of a line |

4. Construct the following line segments.

- (a) $XY = 3 \text{ cm}$ (b) $CD = 4 \text{ cm}$ (c) $AB = 12 \text{ cm}$ (d) $PQ = 9 \text{ cm}$

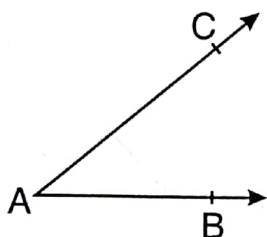
INTRODUCING THE CONCEPT OF ANGLES

Look at the figures carefully.



In the figures above, the end points of the rays of figure (2) and (4) coincide with each other.

Now, look at the figure given below:



2 rays are \vec{AB} , \vec{AC}



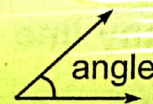
End point of \vec{AC} is A



End point of \vec{AB} is A

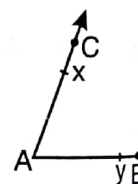
Rays AB and AC have common end point 'A'.

Two rays with the same end point form an **angle**.



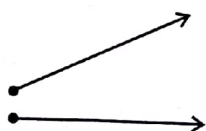
Look at the figure.

Line segments AX and AY are parts of rays AC and AB. So they also form an angle.



Worksheet 1

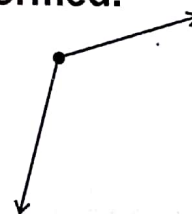
1. Tick (✓) the figures where an angle is formed.



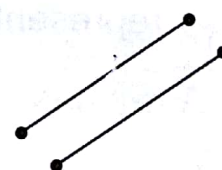
(a) ☐



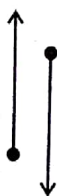
(b) ☐



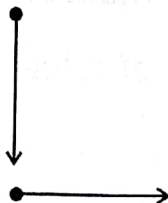
(c) ☐



(d) ☐



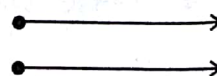
(e) ☐



(f) ☐



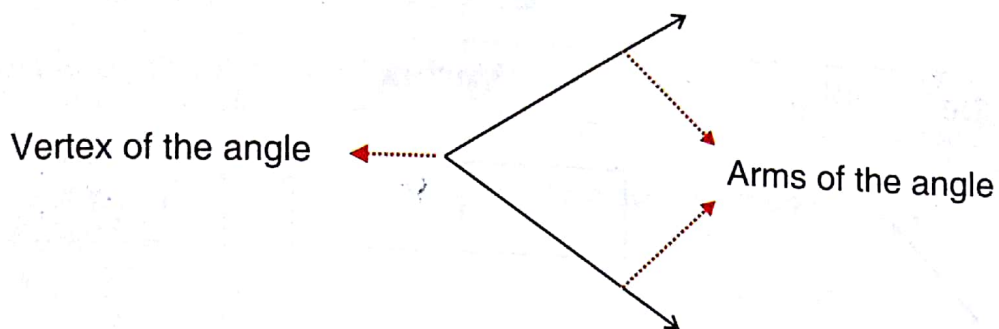
(g) ☐



(h) ☐

2. Draw any four angles in your notebook.

VERTEX AND ARMS OF AN ANGLE



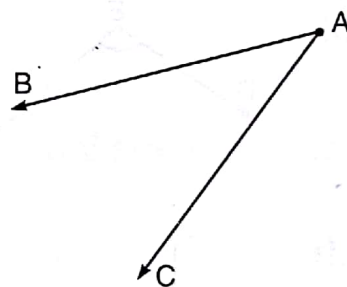
- The common end point of the two rays is called the **Vertex** of the angle formed by them.
- The two rays forming an angle are called the **Arms** of the angle.

NAMING AN ANGLE

Name of this angle is angle BAC
or angle CAB.

The symbol ' \angle ' is used to denote an angle.

We write \angle **BAC** or \angle **CAB**



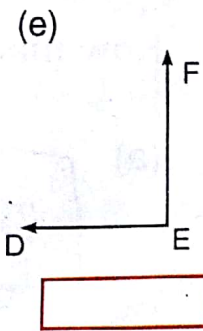
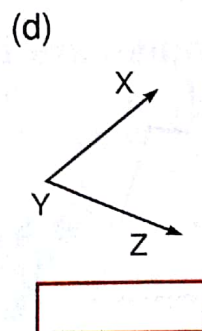
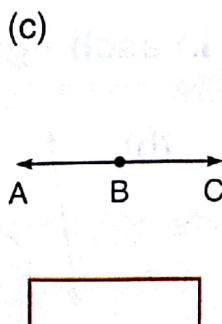
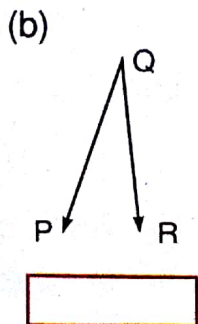
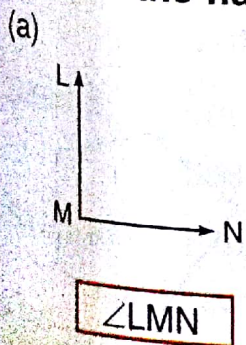
Remember

The letter denoting the vertex should always be written in the middle.

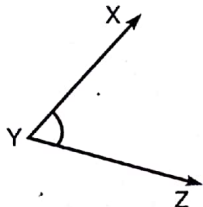
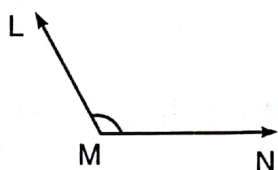
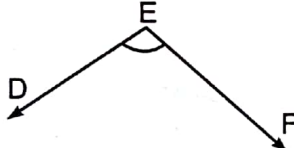
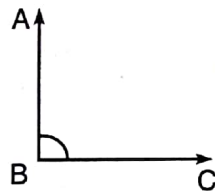
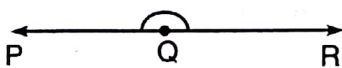
\angle BAC or \angle CAB
Vertex

Worksheet 2

1. Write the names of the following angles. The first one is done for you.



2. You are given a few angles. Complete the table. The first one is done for you.

Angle	Vertex	Arms
<p>(a)</p> 	<div>Y</div>	<div>\vec{YX}</div> <div>\vec{YZ}</div>
<p>(b)</p> 	<div></div>	<div></div> <div></div>
<p>(c)</p> 	<div></div>	<div></div> <div></div>
<p>(d)</p> 	<div></div>	<div></div> <div></div>
<p>(e)</p> 	<div></div>	<div></div> <div></div>

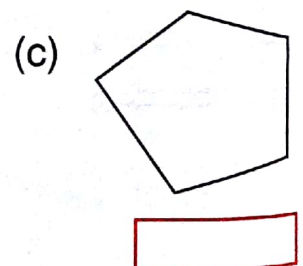
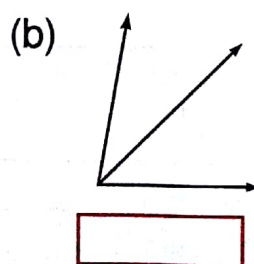
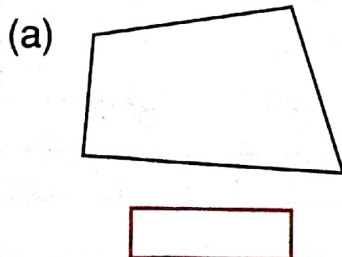
3. Draw the following angles.

(a) $\angle MNP$

(b) $\angle ZYX$

(c) $\angle BCD$

4. How many angles are there in each figure?

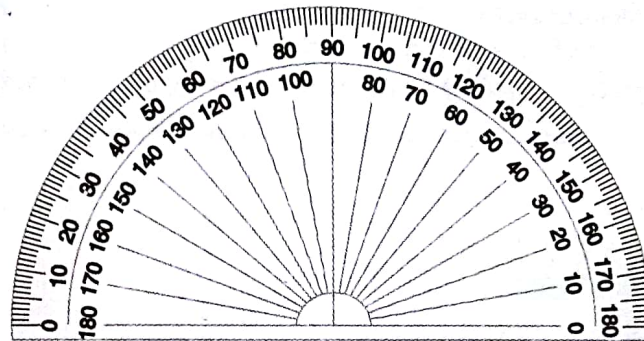


MEASURING ANGLES

The standard unit of an angle is **Degree**.

The special symbol ($^{\circ}$) is used for degree. It is written at the right side of the number high up.

We use protractor to measure an angle.



Protractor

Take out the protractor from your geometry box.

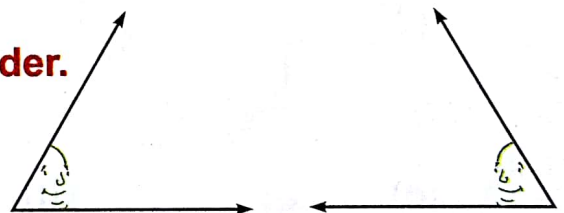
There are two rows of numbers marked on the protractor.

The numbers are marked from 0 to 180. There are 180 equal sub-divisions.

Each sub-division denotes 1° (one degree).

The protractor is having two scales in reverse order.

It is because the angles to be measured may be facing either left or right.



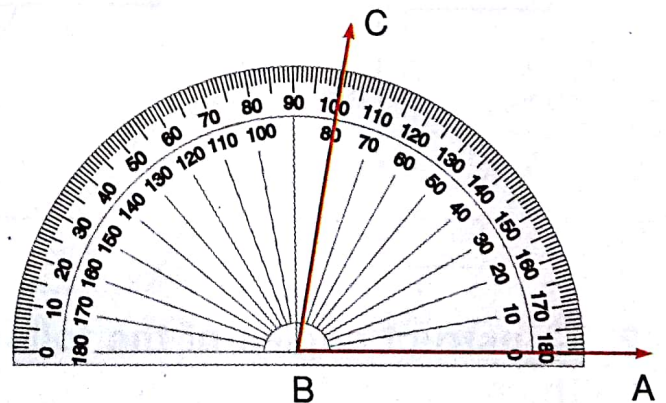
Let us measure an angle $\angle ABC$

Step I: Place the centre of the protractor on the vertex B of the $\angle CBA$ and adjust the protractor so that the base line falls along one arm (\overrightarrow{BA}) of the angle.

Step II: Look for the scale which begins with zero (the arm coinciding with the base line).

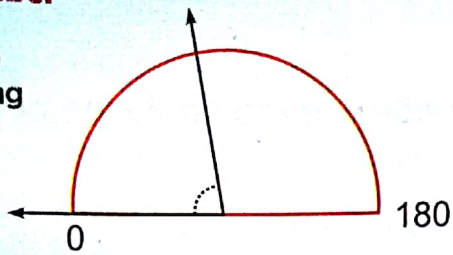
Step III: Read the mark on the protractor where the other arm (\overrightarrow{BC}) of the angle crosses the scale on the protractor.

Here, as shown in the figure, $\angle ABC = 80^{\circ}$



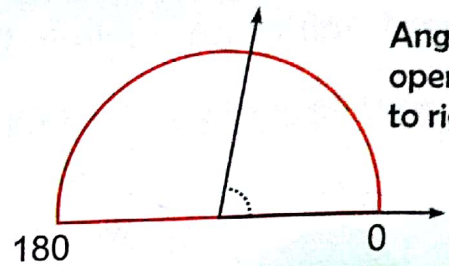
Remember

Angles opening to left



Angles opening to the left are measured on the scale which increases from left to right.

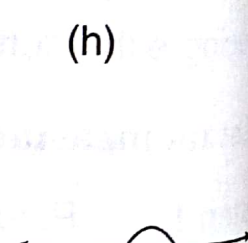
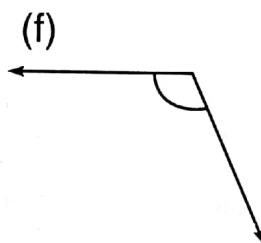
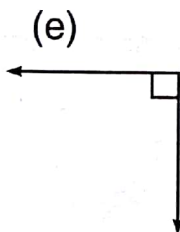
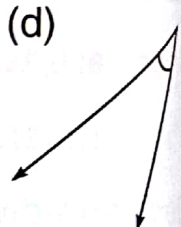
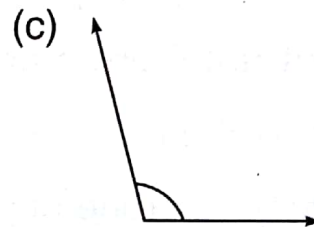
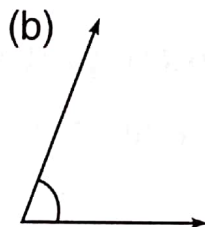
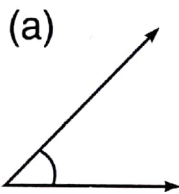
Angles opening to right



Angles opening to the right are measured on the scale which increases from right to left.

Worksheet 3

1. Use the protractor and measure the following angles.



2. Construct angles of the following measures. Label the angles and name them.

(a) 40°

(b) 75°

(c) 90°

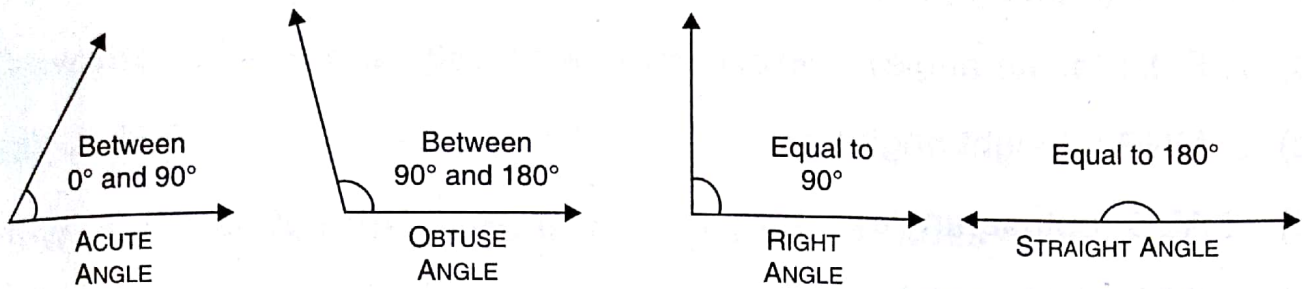
(d) 100°

(e) 120°

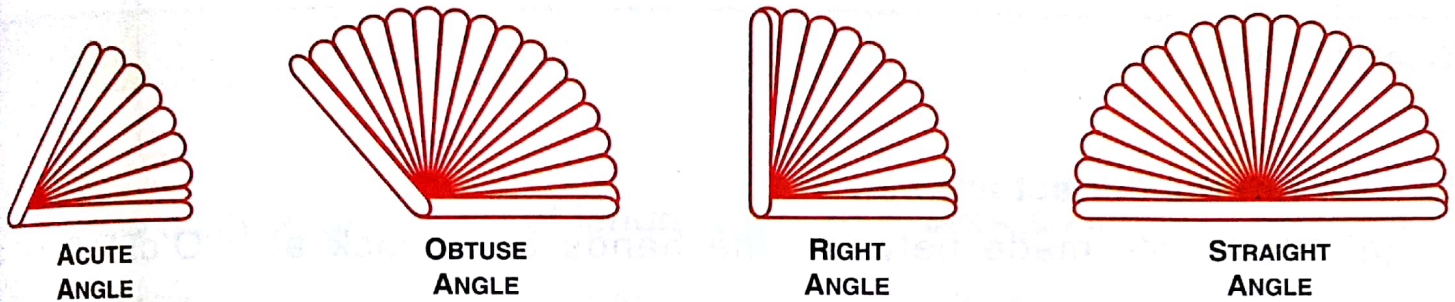
(f) 155°

TYPES OF ANGLES

Based on the degree measure, the angles are classified as:



Let us open this beautiful Japanese fan and observe the different angles formed.

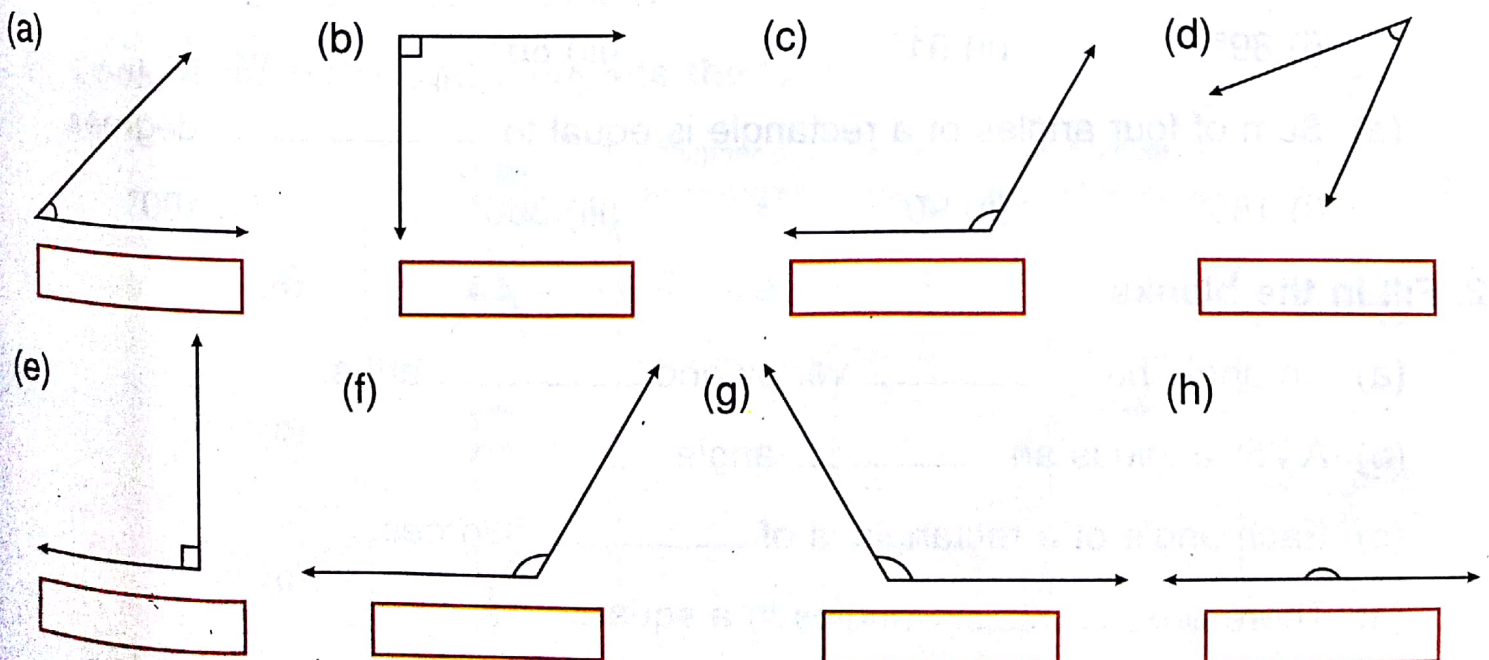


Do you know?

An angle whose measure is equal to 0° is called **zero angle**.

Worksheet 4

1. Measure the following angles and verify them as acute, obtuse, right or straight angle.



2. Draw the angles as per their types.

- (a) $\angle XYZ$ (right angle)
- (b) $\angle PQR$ (acute angle)
- (c) $\angle MNP$ (straight angle)
- (d) $\angle ABC$ (obtuse angle)
- (e) $\angle DEF$ (right angle)

Brain Teasers

1. Tick (✓) the correct answer.

- (a) The angle made between the hands of a clock at 2 O'clock is _____ angle.
 - (i) obtuse
 - (ii) acute
 - (iii) right
 - (iv) straight
- (b) There are _____ right angles in a straight angle.
 - (i) 3
 - (ii) 2
 - (iii) 1
 - (iv) 4
- (c) The two rays forming an angle are called the _____ of the angle.
 - (i) arms
 - (ii) angle
 - (iii) degree
 - (iv) vertex
- (d) An angle of measure equal to _____ is an obtuse angle.
 - (i) 89°
 - (ii) 91°
 - (iii) 80°
 - (iv) 81°
- (e) Sum of four angles of a rectangle is equal to _____ degrees.
 - (i) 180°
 - (ii) 90°
 - (iii) 360°
 - (iv) 100°

2. Fill in the blanks.

- (a) An angle has _____ vertex and _____ arms.
- (b) A 75° angle is an _____ angle.
- (c) Each angle of a rectangle is of _____ degrees.
- (d) There are _____ angles in a square.

(e) There are _____ angles in a triangle.

(f) An angle equal to 180° is called a _____ angle.

3. Draw the following angles of any measure.

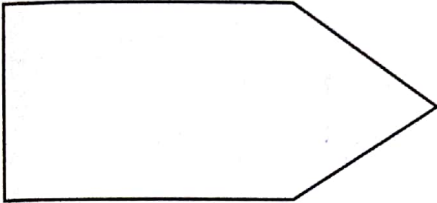
(a) $\angle AOB$

(b) $\angle XYZ$

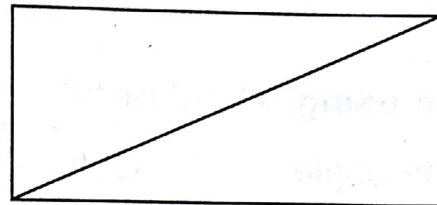
(c) $\angle MNP$

4. How many angles are there in the following figures?

(a)



(b)



5. Draw a line segment PQ of length 6 cm. At P, draw an angle of measure 60° .

6. Construct the following angles:

(a) 110°

(b) 90°

(c) 25°

(d) 165°

7. Look at the given figure and answer the following:

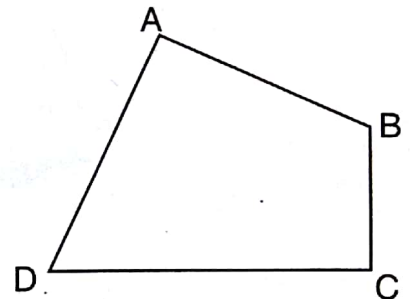
(a) How many acute angles are there?

(b) How many obtuse angles are there?

(c) How many right angles are there?

(d) Is $\angle ABC$ an acute angle?

(e) $\angle DCB =$ _____ degree.

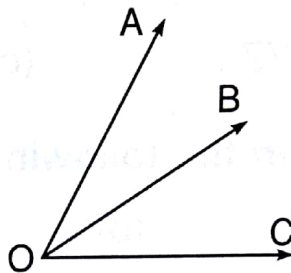


8. Look at the letter and complete the table.

	Letter	Number of acute angles	Number of obtuse angles	Number of right angles
(a)	A			
(b)	F			
(c)	Y			

9. The hour hand and minute hand of a clock are making an angle of 90° with each other. The time is o' clock or o' clock.

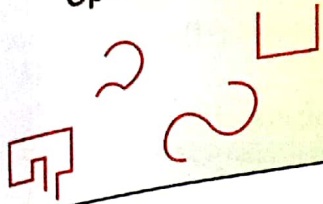
10. Name all the angles in the given figure.



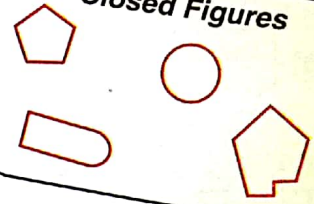
11. Compare using '>', '<' or '='

- (a) Acute angle ☐ Obtuse angle
(b) Right angle ☐ Obtuse angle
(c) Straight angle ☐ Two right angles

Open Figures

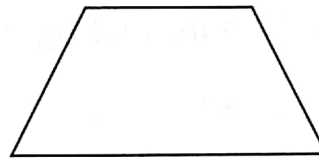
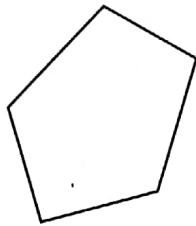
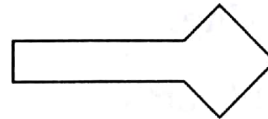
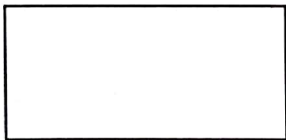


Closed Figures



Do you remember
Open figures and Closed figures?

Observe the closed figures given below:



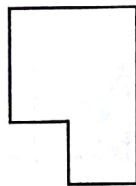
These are closed figures made of line segments.

Worksheet 1

1. Tick (✓) the closed figures in the following:



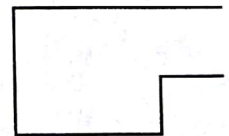
(a)



(b)



(c)



(d)



(e)



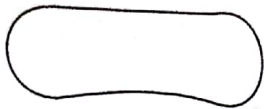
(f)



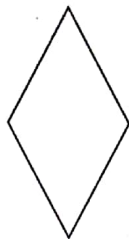
(g)



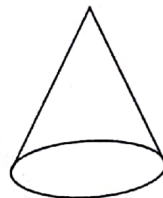
2. Tick (✓) the figures or shapes made of line segments only.



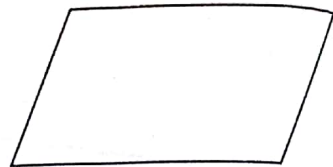
(a) ☐



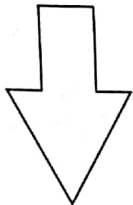
(b) ☐



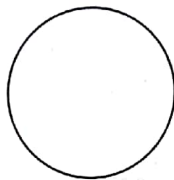
(c) ☐



(d) ☐



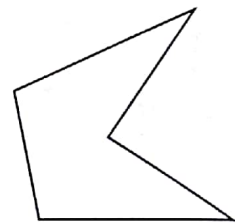
(e) ☐



(f) ☐



(g) ☐



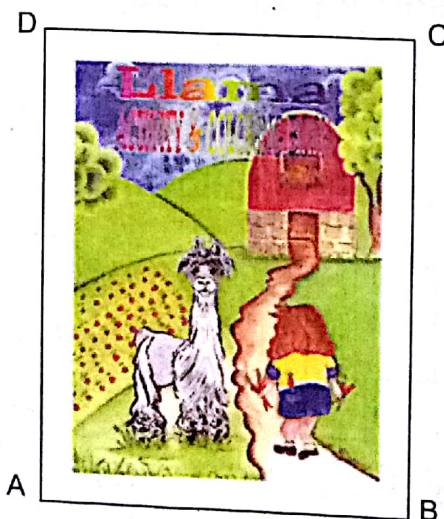
(h) ☐

3. Draw the following:

- (a) Two closed figures
- (b) Two open figures
- (c) Two closed figures using line segments only

MEANING OF PERIMETER

Take a page from a book.



Touch and feel the boundary of this page with your fingers. What will be the length of the boundary?

The length of the boundary will be the sum of lengths of the line segments AB, BC, CD and DA.

If, $AB = 5 \text{ cm}$, $BC = 4 \text{ cm}$, $CD = 5 \text{ cm}$, $DA = 4 \text{ cm}$

$AB + BC + CD + DA$ will be $(5 + 4 + 5 + 4) \text{ cm} = 18 \text{ cm}$

18 cm is the length of boundary of this page. This length is called the **Perimeter** of the page.

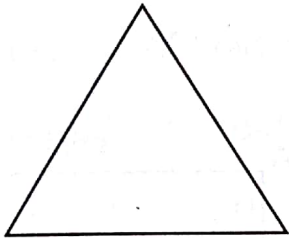
Remember

The length of boundary of a closed figure is called the **perimeter** of the closed figure.

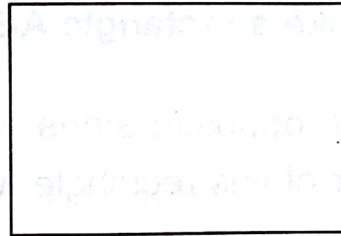
Worksheet 2

1. Find the perimeter of the following figures by measuring the sides.

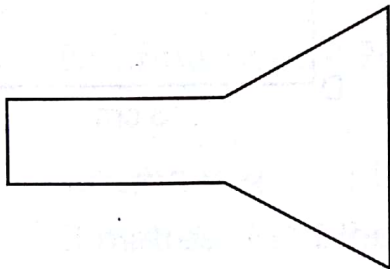
(a)



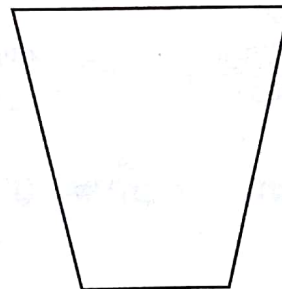
(b)



(c)

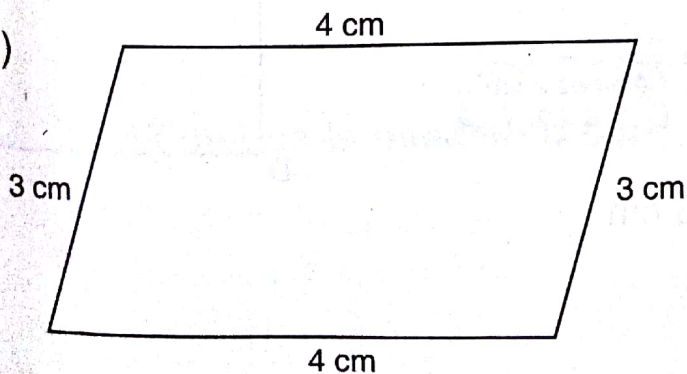


(d)

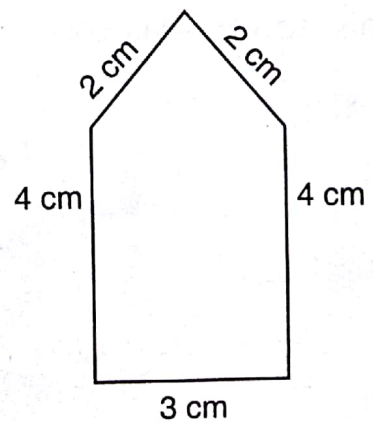


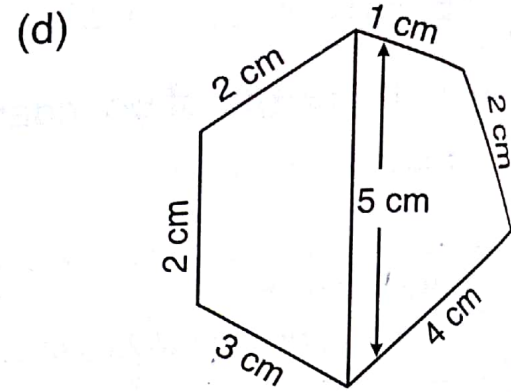
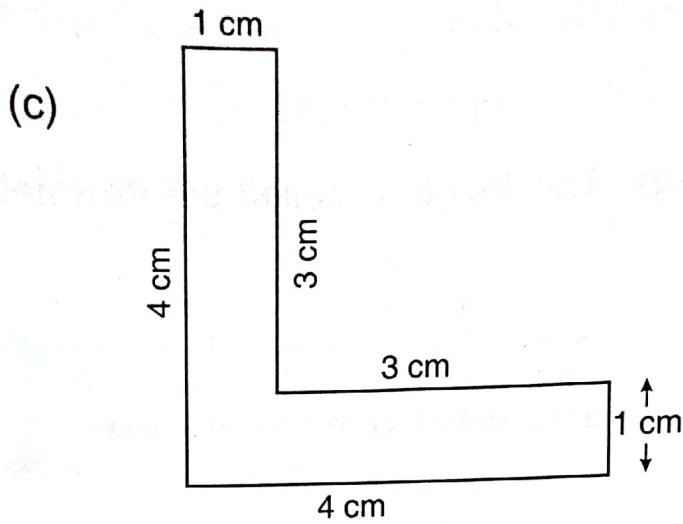
2. Find the perimeters of the following figures using the measurements given below:

(a)



(b)





Let us find the perimeter of the following figures.

I. Rectangle

Let us take a rectangle ABCD.

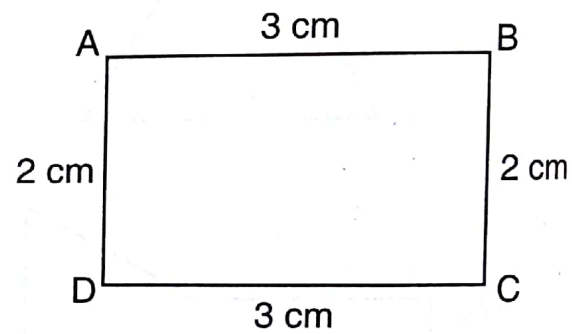
Since the opposite sides are equal, the perimeter of this rectangle will be—

$$2 \times 3 \text{ cm} + 2 \times 2 \text{ cm}$$

2 times 3 cm
(2 × 3)

2 times 2 cm
(2 × 2)

$$6 \text{ cm} + 4 \text{ cm} = 10 \text{ cm}$$



II. Square

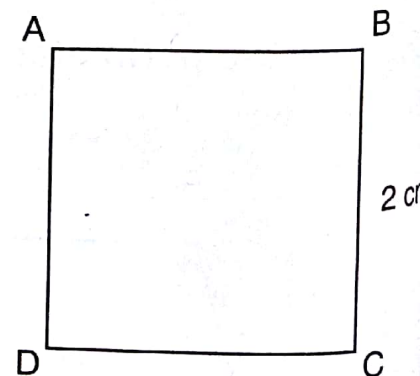
Let us take a square ABCD.

Since all the four sides are equal, the perimeter of this square will be—

$$4 \times 2 \text{ cm} \rightarrow$$

4 times 2 cm
4 × 2

$$4 \times 2 \text{ cm} = 8 \text{ cm}$$

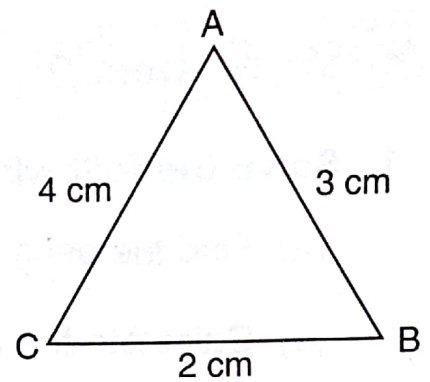


III. Triangle

Let us take a triangle ABC.

The perimeter of this triangle will be sum of its three sides.

$$2 \text{ cm} + 3 \text{ cm} + 4 \text{ cm} = 9 \text{ cm}$$



Word Problems

Example 1: Krishna has a rectangular garden whose length is 75 metres and breadth is 45 metres. How much wire will he need to fence the field?

Solution: The length of wire needed will be equal to the perimeter of the field.

$$\text{Length of field} = 75 \text{ m}$$

$$\text{Breadth of field} = 45 \text{ m}$$

$$\begin{aligned} \text{Length of wire needed} &= 2 \times 75 \text{ m} + 2 \times 45 \text{ m} \\ &= 150 \text{ m} + 90 \text{ m} = 240 \text{ m} \end{aligned}$$

Krishna needs 240 metres of wire to fence the field.

Example 2: Reema wants to fix a border to a square carpet whose each edge is 3 metres. Find the length of the border.

Solution: The length of the border is equal to the perimeter of the square.

$$\text{Each side of the carpet} = 3 \text{ m}$$

$$\text{Border needed} = 4 \times 3 \text{ m}$$

$$= 12 \text{ metres}$$

12 metres is needed to border the carpet.

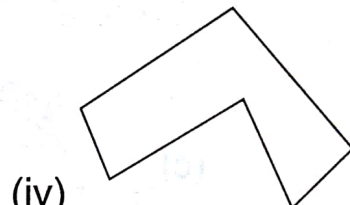
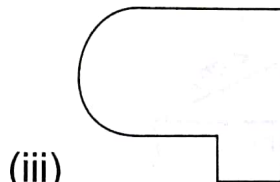
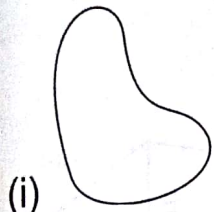
Worksheet 3

1. Solve the following word problems.

- (a) Find the perimeter of a rectangle whose length is 12 cm and breadth is 8 cm.
- (b) Calculate the perimeter of the square whose sides are given below:
- (i) 6 cm (ii) 11 metres (iii) 26 cm
- (c) The length of three sides of a triangle are 6 cm, 8 cm and 10 cm. Find its perimeter.
- (d) A boy runs around a rectangular field, the length of which is 35 metres and the breadth is 20 metres. How much distance will he run?
- (e) Sheela wants to fix ribbon along the border of a painting. If the length and breadth of the painting are 36 cm and 15 cm respectively, how much ribbon is required by Sheela?
- (f) Raju has to frame a square photo having one side of length 12 cm. How much material will Raju require for this job?
- (g) A boy runs two times around a field, the length of which is 62 m and breadth is 40 m. Find the distance covered by him.
- (h) Tina ran around a rectangular garden of length 12 metres and breadth 8 metres. Meena ran around a square field of side 11 metres. Who covered more distance and by how much?

1. Tick (✓) the correct answer.

(a) Which of the following does not belong to the group?



(b) Perimeter of a triangle is 15 cm. If length of one side is 4 cm, the sum of other two sides will be _____.

(i) 19 cm

(ii) 11 cm

(iii) 12 cm

(iv) 6 cm

(c) Rahul covered a distance of 800 m in running around a square garden once. The length of a side of the garden is _____.

(i) 400 m

(ii) 200 m

(iii) 800 m

(iv) 100 m

(d) I need _____ of ribbon to make a border around a rectangular picture of length 20 cm and breath 8 cm.

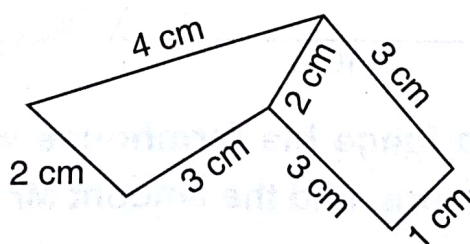
(i) 28 cm

(ii) 56 cm

(iii) 48 cm

(iv) 36 cm

(e) Perimeter of the given figure is _____ cm.



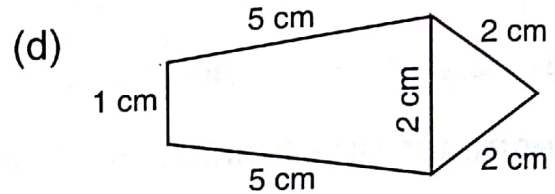
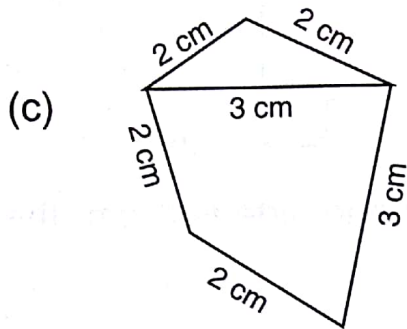
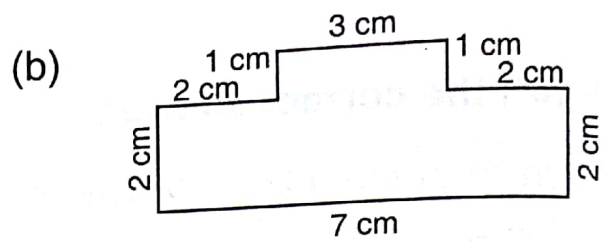
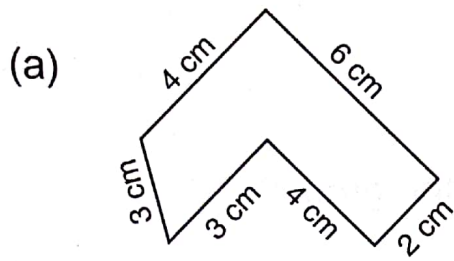
(i) 18 cm

(ii) 15 cm

(iii) 16 cm

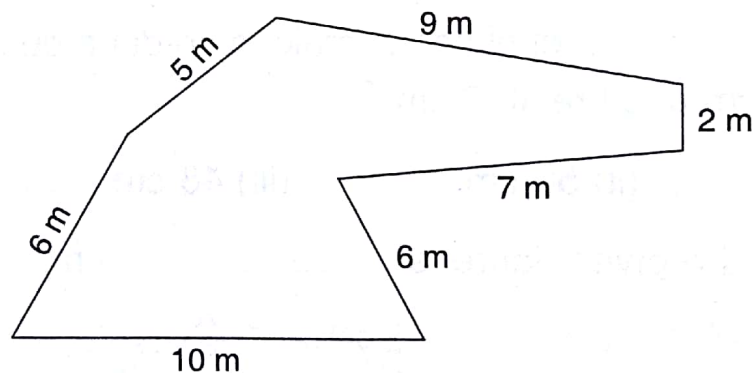
(iv) 12 cm

2. Find the perimeter of the following:



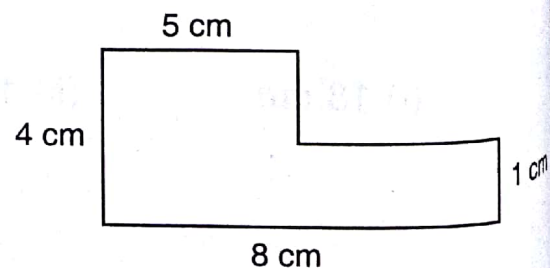
3. Renu is having a rectangular field whose length is 7 metres and breadth is 4 metres. Find the perimeter of the field.

4. Mr Kumar has a farmhouse. The shape of boundary of his farmhouse is given below:



Mr Kumar wants to fence his farmhouse with barbed wire. If the cost of fencing is ₹ 25 per metre, find the amount Mr Kumar has to spend on fencing.

5. Find the perimeter of the given figure.



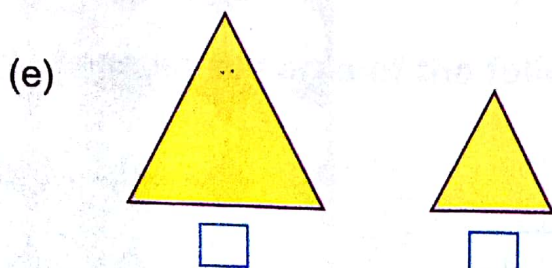
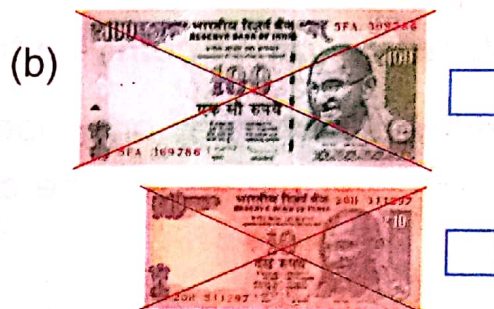
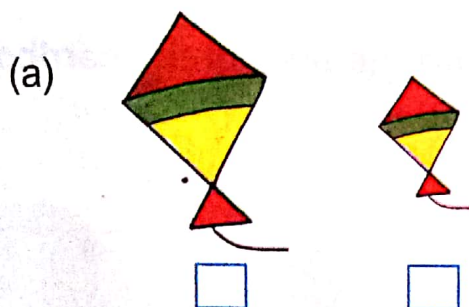
6. My mother has 90 cm lace with her. She wants to stitch this lace on the border of my square handkerchief. If the length of each side of my handkerchief is 20 cm, find the length of the remaining lace.



Do you remember surface?

Worksheet 1

Out of the two figures, tick (✓) the figure which has larger surface.

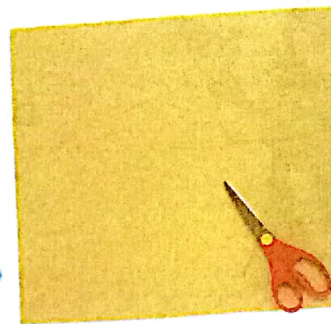
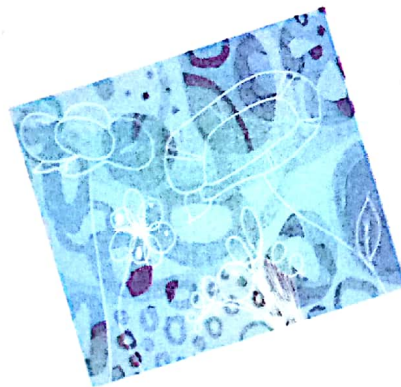


Remember

The measure of surface enclosed by a closed figure is called **Area**.

See! I have to paste glazed paper on this piece of cardboard.

How will you know the measure of glazed paper required by you?



In order to know the measure of glazed paper needed, we need to know the area of the cardboard.

Let us place one rupee coins on the cardboard to find the area of the cardboard.

Count and see how many one rupee coins are used to cover the area of the cardboard.

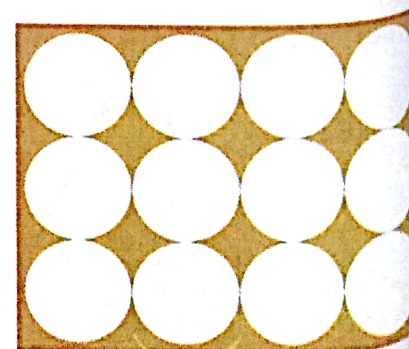
I have used 12 one rupee coins.



12 One rupee coins

Area of the cardboard = 12 coins of one rupee arranged in four columns.

See! We have left out the area between coins.

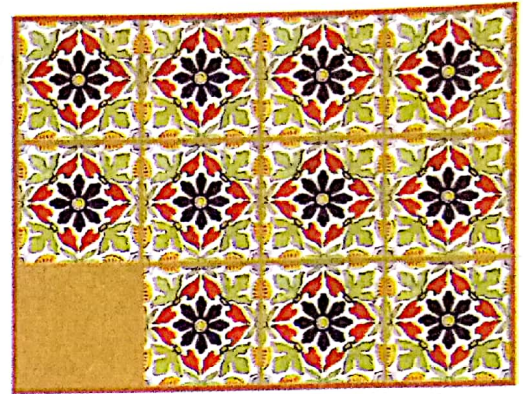
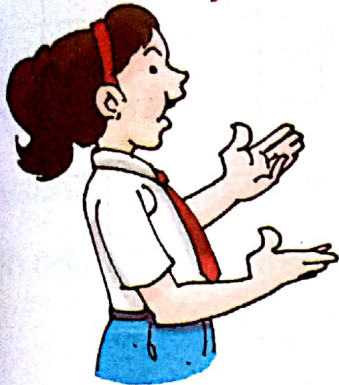


Left out area

So, this is not the accurate area.

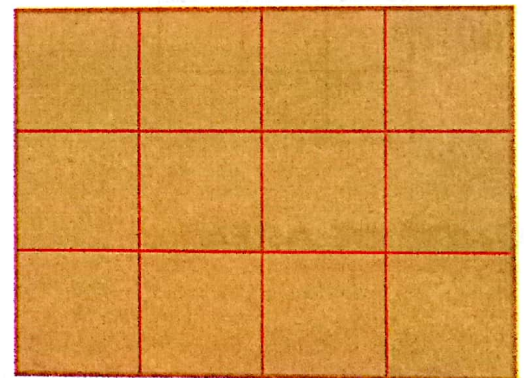
We need an accurate unit for measuring area.

Let us arrange the square tiles on the cardboard to find its area.



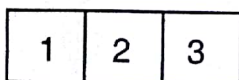
I have used 12 square tiles and no space is left between them.

So, we choose a **square** as the best unit for measuring area.

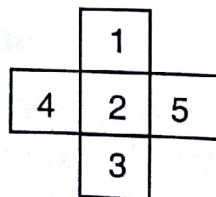


A square is the best unit for measuring the area.

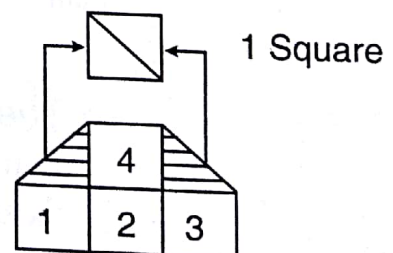
Let us measure the area of the following figures in terms of unit area (Squares).



3 Squares



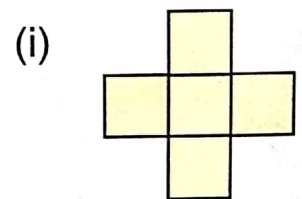
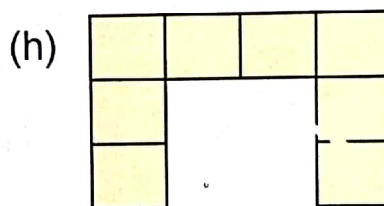
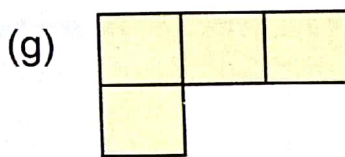
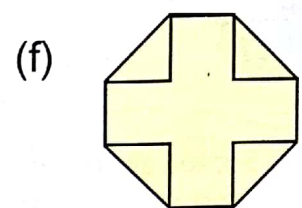
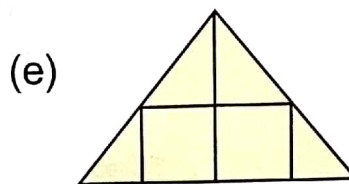
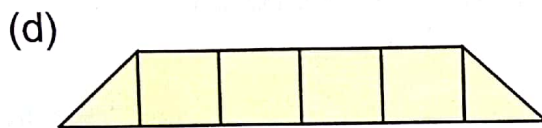
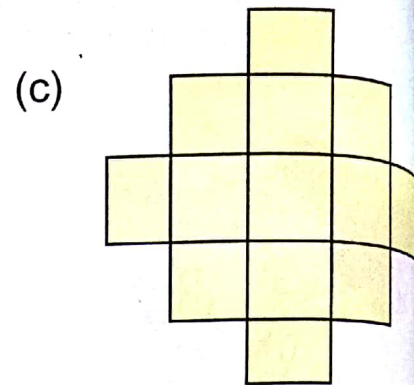
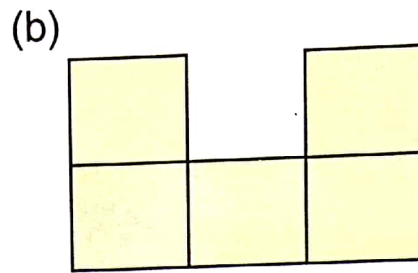
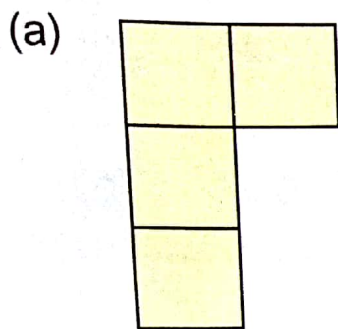
5 Squares



$4 + 1 = 5$ Squares

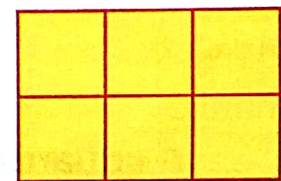
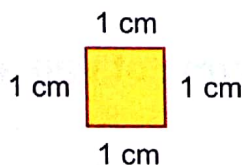
Worksheet 2

1. Find the area of these figures in terms of unit area (squares).



UNITS OF AREA

To find the area of this figure, let us use squares having each side equal to 1 centimetre (1 cm).



We need 6 squares of sides 1 cm each.
Area = 6 square cm
or 6 sq. cm

The units used to measure area are—
Square centimetre (sq. cm)
Square metre (sq. m)
Square millimetre (sq. mm).

AREA OF A RECTANGLE AND A SQUARE

Look at the given rectangle.

Its length is 4 cm and breadth is 2 cm.

Let us divide the rectangle into squares.

There are four columns of 2 squares each.

Total number of columns = 4

In one column, there are 2 squares.

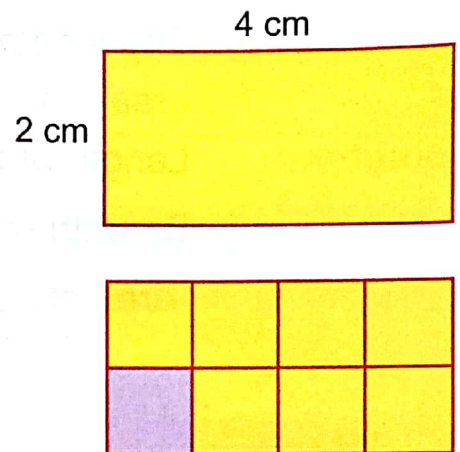
In order to find the area of a rectangle, we can also multiply—

Number of columns \times Number of squares in each column

$$= 4 \times 2 \text{ squares}$$

$$= 8 \text{ squares}$$

$$= 8 \text{ sq. cm}$$



Area of a rectangle = Length \times Breadth

Similarly, we can find the area of a square.

Look at the given square.

Its side is 3 cm.

Let us divide it into squares.

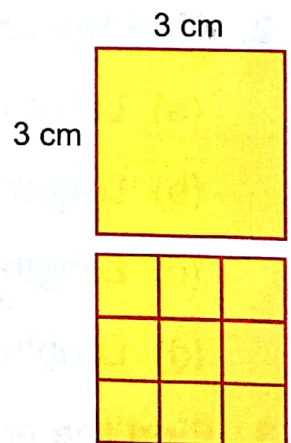
Number of columns = 3

In one column, there are 3 squares.

Area of square = Number of columns \times Number of squares in each column

$$= 3 \times 3 \text{ squares}$$

$$= 9 \text{ squares or } 9 \text{ sq. cm}$$



Area of a square = Side \times Side

Word Problems

Example: The length of a park is 15 metres and breadth is 8 metres. Find the area of the park.

Solution: Length of the park = 15 m
Breadth of the park = 8 m
Area of park = Length \times Breadth
 $= 15 \text{ m} \times 8 \text{ m} = 120 \text{ sq. m}$

Worksheet 3

1. Fill in the blanks.

- (a) The best unit of measuring area is _____.
- (b) Measure of the amount of surface enclosed by a closed figure is called _____.
- (c) Area of a rectangle = Length \times _____.
- (d) Area of a square = _____ \times _____.
- (e) The area of a square having one side equal to 1 cm is _____.

2. Find the area of a rectangle whose dimensions are given below:

- | | |
|--------------------|-----------------|
| (a) Length = 8 cm | Breadth = 3 cm |
| (b) Length = 12 cm | Breadth = 9 cm |
| (c) Length = 32 m | Breadth = 12 m |
| (d) Length = 1 m | Breadth = 75 cm |

3. Find the area of the following squares whose sides are given below:

- (a) 6 cm (b) 11 cm

4. The length of a carpet is 5 metres and the breadth is 2 metres. Find the area of the carpet.

5. The length of the one side of a square handkerchief is 22 cm. Find the area of the handkerchief.

6. The length of a playground is 10 metres and breadth is 6 metres. Find the area of the playground.

Value Based Question

During Summer break, Raghu went to his grandmother's house in a village. One day, when he was walking around the fields, he saw an old farmer irrigating his field of length 90 m and breadth 40 m using pipe. After sometime, Raghu saw that the farmer was tired and was sitting on the ground putting his head down and still one-fourth of the field was left to be irrigated. He immediately went to him and helped him irrigate the remaining field. The old farmer was happy and thanked Raghu.



1. How much field was irrigated by Raghu?
2. Which value is reflected by Raghu?
3. How can you help old people in their work?

Brain Teasers

1. Tick (✓) the correct answer.

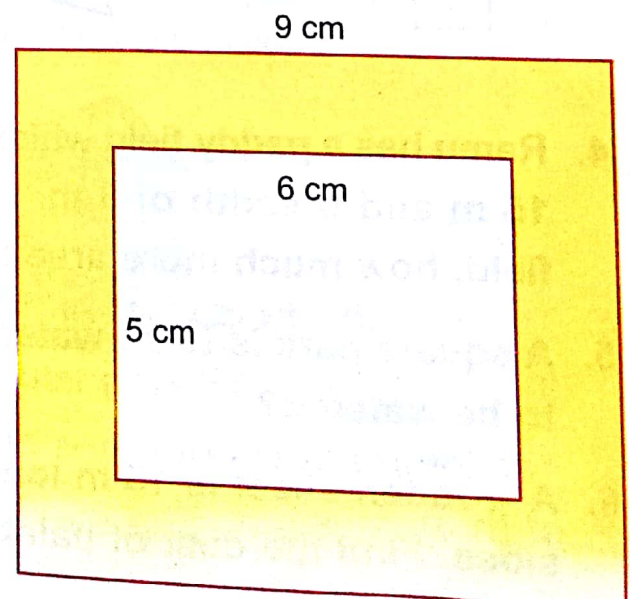
(a) The area of the shaded portion is—

(i) 72 sq. cm

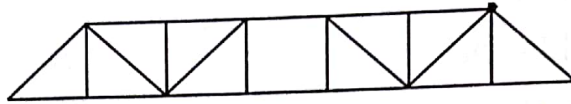
(ii) 30 sq. cm

(iii) 102 sq. cm

(iv) 42 sq. cm



- (b) Length of a rectangle is 12 cm and its breadth is 4 cm less than the length.
The area of the rectangle is—
(i) 40 sq. cm (ii) 96 sq. cm (iii) 40 cm (iv) 96 cm
- (c) The best unit to measure area is—
(i) rectangle (ii) square (iii) triangle (iv) circle
- (d) Area of the given figure is _____ squares.

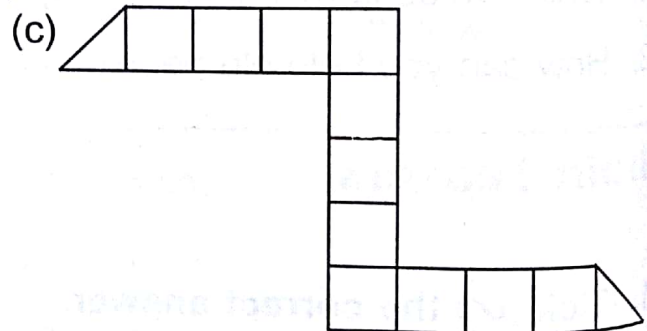
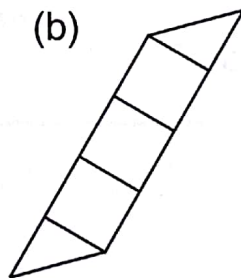
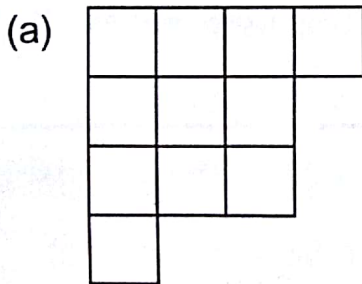


- (i) 6 (ii) 10 (iii) 12 (iv) 5
- (e) Area of a rectangle of length 7 cm and breadth 4 cm is
(i) 28 cm (ii) 22 sq. cm (iii) 22 cm (iv) 28 sq. cm

2. Which has more area?

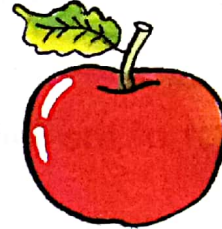
- (a) Postcard or Inland letter. (c) 10 rupee note or a 100 rupee note.
(b) Blackboard or art sheet. (d) Handkerchief or Bedsheet.

3. Find the area in terms of unit squares.



4. Ramu has a paddy field which is in the shape of a rectangle. It has a length of 15 m and breadth of 8 m. If he has ploughed an area of 90 sq. m of the field, how much more area is to be ploughed?
5. A square park is to be watered. If one side of the park is 5 m, find the area to be watered?
6. A wooden sheet is 15 m long and 6 m broad. It has to be painted on both sides. Find the cost of painting at ₹ 30 per square metre.

Look at these objects.



All these solids occupy a certain amount of space.

The measure of space a solid occupies is called the **volume** of the solid.



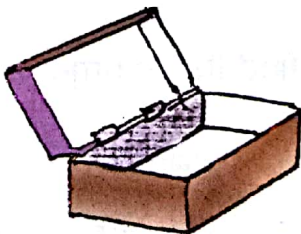
Look at the caps given here. Which one occupies more space?



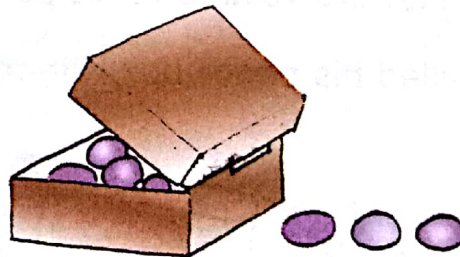
The red cap occupies more space.

So the volume of red cap is greater than that of the pink cap.

Rohan has an empty box



Now Rohan fills the box with marbles and closes it.



Volume of a solid depends on the outer physical size.

Remember

Empty or full objects of same size and shape have the same volume.

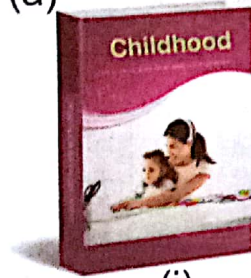
Worksheet 1

1. Which of the following has more volume?

- (a) Cricket ball or table tennis ball?
- (b) Lemon or watermelon?
- (c) $\frac{1}{2}$ l polypack of milk or 1 l polypack of milk?

2. In each of the following pairs, which object has lesser volume?

(a)



(i)



(ii)

☐

(b)



(i)



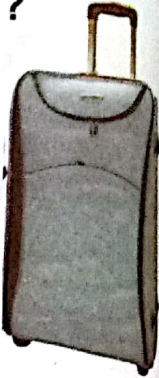
(ii)

☐

(c)



(i)



(ii)

☐

3. Which of the following are true?

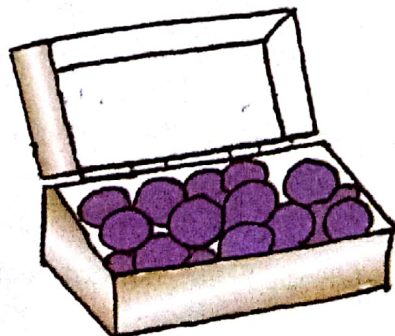
- (a) A cricket ball and a football have the same volume.
- (b) An empty chalk box has less volume than a chalk box of same size and shape full of chalks.
- (c) Two oil cans of same size, one empty and one full of oil have the same volume.

☐☐☐

MEASUREMENT OF VOLUME

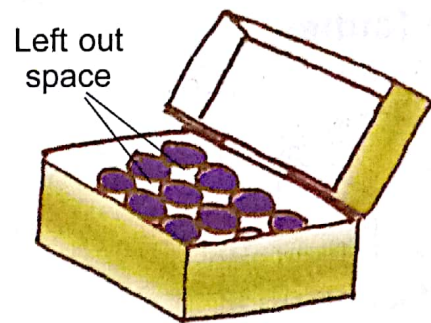
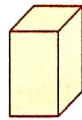
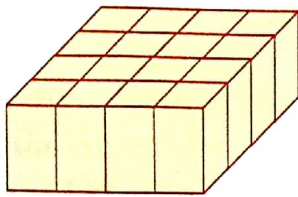
Anil wants to find the volume of his pencil box.

Look he has filled his pencil box with marbles to find its volume.

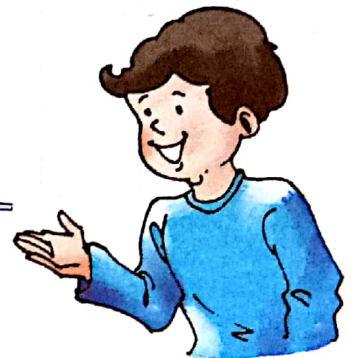


I have used 40 marbles.

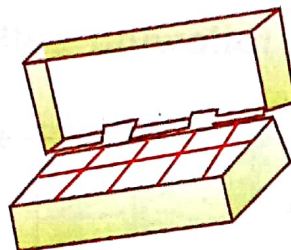
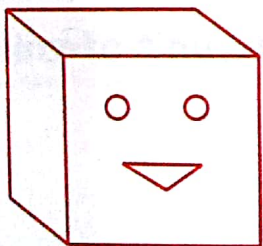
Volume of the pencil box = 40 marbles.



So the volume of 40 marbles is not accurate. We need an accurate unit for measuring volume.

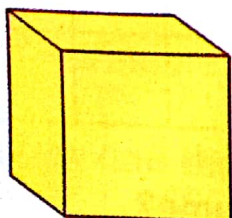


Do you remember me?



Let us fit cubes into the pencil box to find its volume.

I have used 16 cubes to fill the pencil box and no space is left between the cubes.

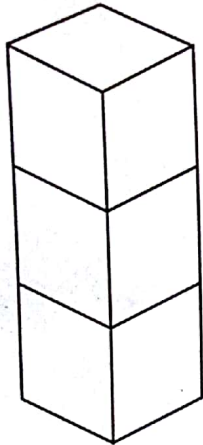


So, we choose a **cube** as the best unit for measuring volume.

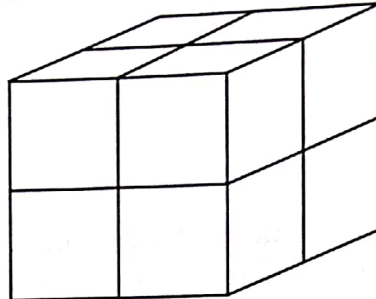


A cube is the best unit for measuring the volume.

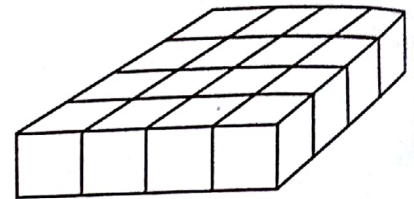
Let us measure the volume of the following solids in terms of the unit volume (cubes).



3 cubes



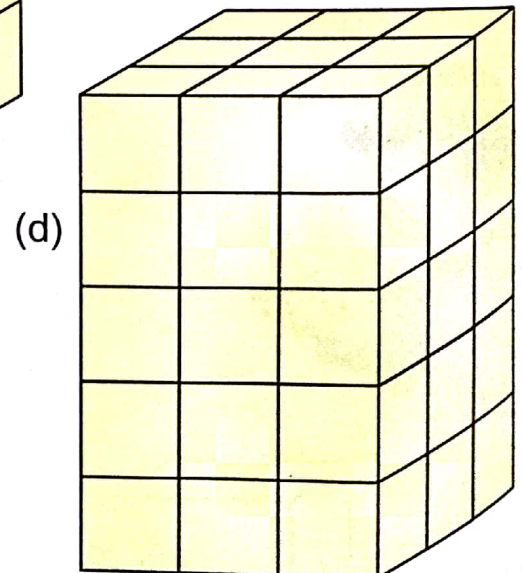
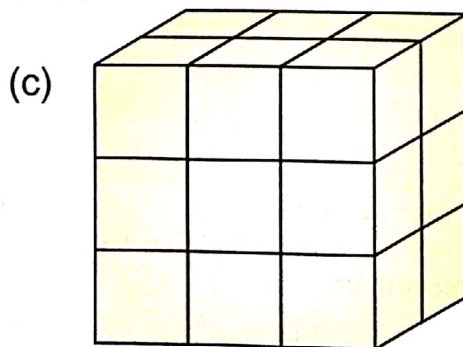
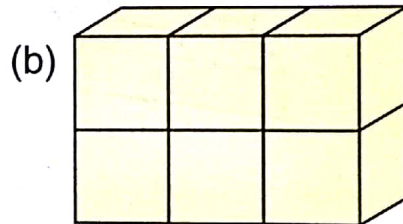
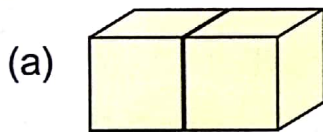
8 cubes



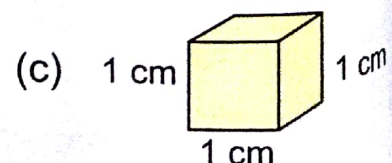
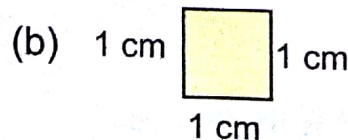
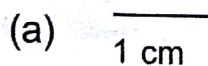
16 cubes

Worksheet 2

1. Find the volume of the following solids in terms of the unit of volume (cubes).

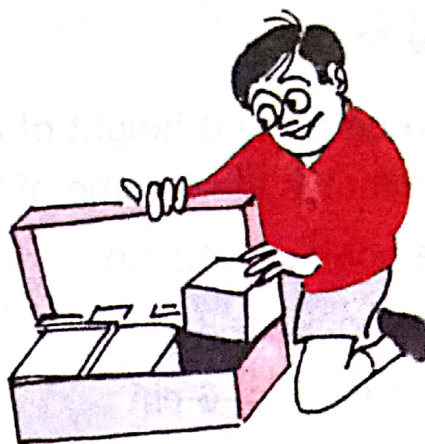


2. Which of the following is the unit to measure volume?



UNITS OF VOLUME

In order to find the volume of this box, let us use cubes with each edge equal to 1 cm.



We need three cubes. Each edge of the cube will be 1 cm.

So, Volume = 3 cubic centimetres or 3 cu. cm

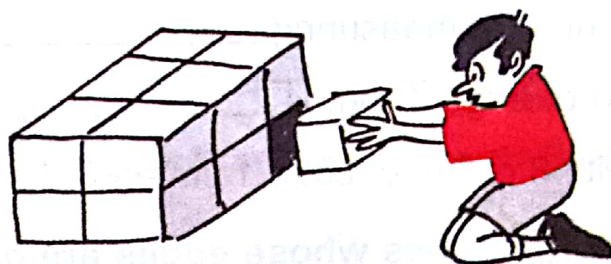
The units used to measure volume are—

Cubic millimetre (cu. mm)

Cubic centimetre (cu. cm)

Cubic metre (cu. m)

VOLUME OF A CUBOID AND A CUBE



Volume of this cuboid is 12 cubic centimetres.

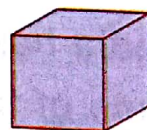
We can also multiply

$$\begin{array}{ccccccc} 3 & \times & 2 & \times & 2 & = & 12 \text{ cubic centimetres} \\ \downarrow & & \downarrow & & \downarrow & & \\ \text{Length} & & \text{Breadth} & & \text{Height} & & \text{or } 12 \text{ cu. cm} \end{array}$$

Volume of a cuboid = Length \times Breadth \times Height

Similarly, let us find the volume of a cube.

In a cube, all these edges are equal.



Volume of a cube = Edge \times Edge \times Edge

Word Problems

Example: The length, breadth and height of a book are 12 cm, 8 cm and 6 cm respectively. What is the volume of the book?

Solution: Length of the book = 12 cm
Breadth of the book = 8 cm
Height of the book = 6 cm
Volume of the book = $12 \text{ cm} \times 8 \text{ cm} \times 6 \text{ cm}$
= 576 cu. cm

Worksheet 3

1. Fill in the blanks.

- (a) Amount of space occupied by a solid is called its _____.
- (b) Volume of a cuboid = Length \times _____ \times _____.
- (c) Volume of a cube = Edge \times _____ \times _____.
- (d) Cube is the best unit for measuring _____.
- (e) Volume of a cube of edge 1 mm is _____.
- (f) If a box is filled with 8 cubes of edge 1 cm each, its volume is _____.

2. Find the volume of these cubes whose edges are given below:

- (a) 4 cm (b) 12 cm (c) 15 cm (d) 13 cm

3. Find the volume of the following cuboids whose dimensions are given below:

- (a) length = 15 cm, breadth = 8 cm, height = 5 cm
- (b) length = 5 cm, breadth = 3 cm, height = 2 cm
- (c) length = 10 cm, breadth = 5 cm, height = 3 cm
- (d) length = 17 cm, breadth = 14 cm, height = 12 cm

4. An encyclopedia has a length of 30 cm, breadth 20 cm and height 8 cm. Find the volume of the encyclopedia.

5. A dice has an edge of 4 cm. Find the volume of the dice.

6. Find the volume of a brick of length 18 cm, breadth 9 cm and height 6 cm.

1. Tick (✓) the correct answer.

(a) The best unit to measure volume is—

- (i) sphere (ii) cuboid (iii) cube (iv) square

(b) Volume of a cube of edge 1 m is—

- (i) 3 m (ii) 1 m (iii) 1 sq. m (iv) 1 cu. m

(c) The length of a cuboid is 10 cm, breadth is 8 cm and height is 2 cm less than breadth. Its volume will be—

- (i) 160 cu. cm (ii) 480 cu. cm (iii) 480 cm (iv) 160 cm

(d) Which of the following has the greatest volume?

- (i) football (ii) cricket ball (iii) table tennis ball (iv) golf ball

(e) A cubical box of edge 10 cm is one-fourth filled with salt. The volume of salt in the box is—

- (i) 1000 cu. cm (ii) 300 cu. cm (iii) 250 cu. cm (iv) 250 sq. cm

2. Measure the sides of the following objects and find their volumes.

(a) Match box

(b) Your Mathematics book

(c) Shoe box

(d) Dice

3. Find the volume of a box of length 9 cm, breadth 5 cm and height 3 cm.

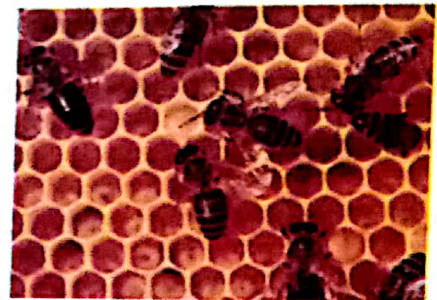
4. Find the volume of a cubical box of edge 8 cm.

5. Which one has more volume?

A cuboid of length 7 cm, breadth 5 cm and height 4 cm or a cube of edge 6 cm.

6. The edge of a cubical box is 6 cm. Half of the box is filled with sand. What is the volume of the sand?

Let us look at some patterns around us.



Name three more things in which you find some patterns.

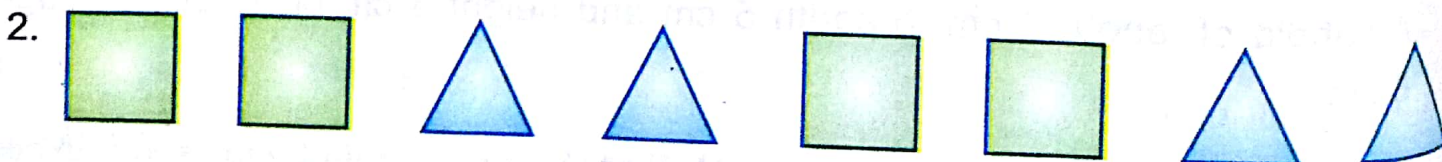
1. _____
2. _____
3. _____

Now look at the patterns of pictures given below:



All these patterns follow same rules.

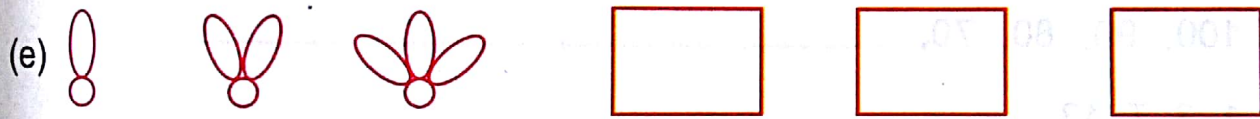
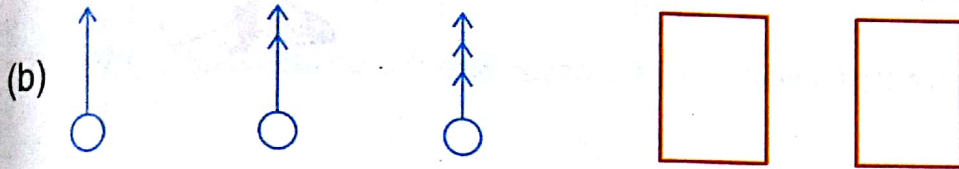
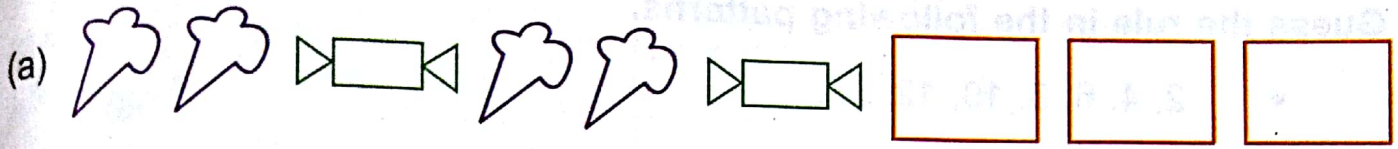
We find that there is one leaf after two flowers.



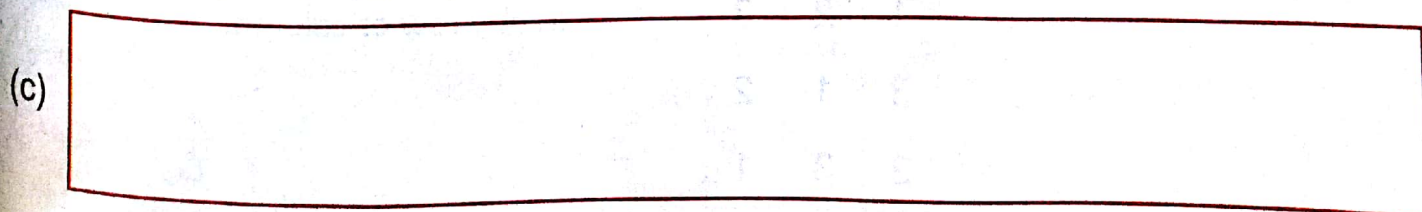
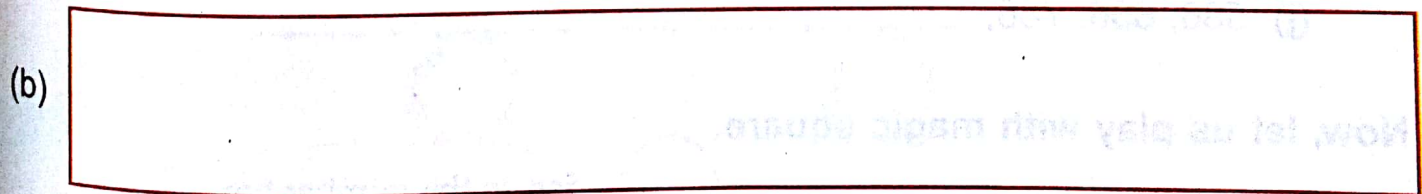
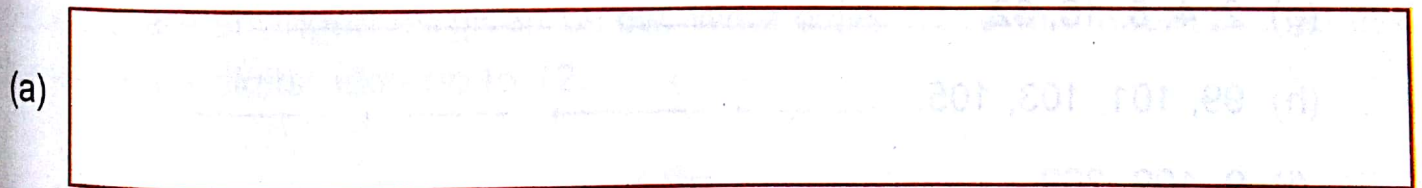
We find that after two squares, there are two triangles.

Worksheet 1

1. Continue the following patterns.



2. Create your own patterns in the space provided.



Let us have some fun with number patterns.

Example : 11, 21, 31, 41, 51, 61,

Guess the rule in the following patterns.

- 2, 4, 6, 8, 10, 12,
- 10, 9, 8, 7,
- 7, 14, 21, 28,

Look at some more number patterns.



Worksheet 2

1. Look for the rules and complete the following patterns.

(a) 52, 57, 62, 67, _____, _____, _____, _____

(b) 1, 3, 5, 7, _____, _____, _____, _____

(c) 30, 27, 24, 21, _____, _____, _____, _____

(d) 100, 90, 80, 70, _____, _____, _____, _____

(e) 1, 3, 7, 13, _____, _____, _____, _____

(f) 11, 22, 33, 44, _____, _____, _____, _____

(g) 2, 4, 8, 16, 32, _____, _____, _____, _____

(h) 99, 101, 103, 105, _____, _____, _____, _____

(i) 9, 109, 209, _____, _____, _____, _____

(j) 586, 686, 786, _____, _____, _____, _____

Now, let us play with magic square.

1	2	3
3	1	2
2	3	1

See, in this number box, no number comes twice in any row or column.



Now, complete the given magic box with letters A, B, C so that no letter comes twice in any row or column.

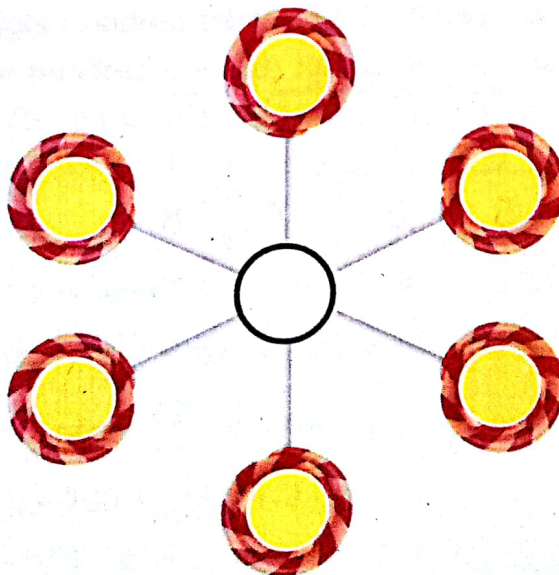
Here is a magic square where sum of numbers in each row and column is 15.

2	7	6
9	5	1
4	3	8

Now fill in the given magic square with numbers 11 to 19 so that sum of numbers in each row and column is 45.

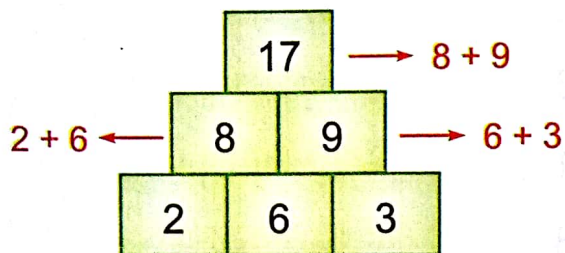
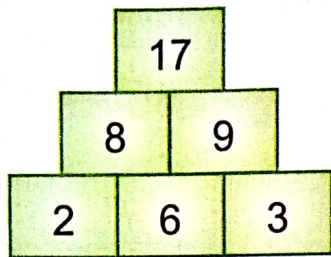
Let us play Lollipop game

Six lollipops are arranged as given below. Write digits 1 to 7 in the lollipops so that each row with 3 digits adds up to 12.



Look at these number towers.

Find the rule for this pattern.



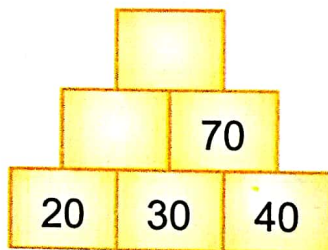
The rule here is,
we add two numbers below
to get the number in the
box above them.



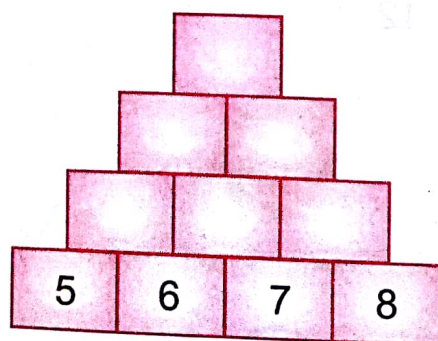
Worksheet 3

1. Complete the given number towers.

(a)



(b)



ANSWERS

UNIT-1 – NUMBERS UP TO 999999

Worksheet 1

1. (a) 35132 (b) 61035 (c) 40000 (d) 45232 (e) 64046 (f) 44100

Worksheet 2

2. (a) Twenty five thousand two. (b) Eight lakh. (c) Fifty one thousand eight. (d) Five lakh twenty one thousand three hundred eighty one. (e) Nine lakh nine. (f) Eleven thousand. (g) One lakh eleven thousand one hundred. (h) Six lakh twenty five thousand. (i) Forty three thousand twenty one. (j) Fifty two thousand six hundred eleven.
3. (a) 15465 (b) 19314 (c) 500000 (d) 47002 (e) 315300 (f) 111111 (g) 50005 (h) 814003 (i) 707007 (j) 909000
4. Ones, Tens, Hundreds, Thousands, Ten Thousands, Lakhs.
5. 99999, 100000; Difference is 1.

Worksheet 4

1. (a) 5 tens or 50 (b) 4 ten thousands or 40000 (c) 2 ones or 2 (d) 9 lakhs or 900000 (e) 0 thousand or 0
2. (a) 4 hundreds or 400 (b) 0 thousand or 0 (c) 3 lakhs or 300000 (d) 0 tens or 0 (e) 6 thousands or 6000 (f) 8 ones or 8 (g) 2 lakhs or 200000 (h) 9 hundreds or 900
3. (c) 84720 4. (b) 48295 5. $700000 > 70$

Worksheet 5

1. Ones, Thousands, Lakhs.
2. Places in Ones period are Ones, Tens, Hundreds.
Places in Thousands period are Thousands and Ten Thousands.
3. (a) 91,409 (b) 1,13,625 (c) 8,24,300 (d) 98,461 (e) 3,10,008 (f) 4,44,444 (g) 1,00,000 (h) 5,05,001
4. (a) Lakhs, Lakhs (b) Ones, Ones (c) Ones, Hundreds, (d) Thousands, Thousands (e) Ones, Tens (f) Thousands, Thousands (g) Ones, Ones (h) Lakhs, Lakhs
5. (a) 62,300 (b) 30,001 (c) 2,01,003 (d) 6,29,060 (e) 50,050 (f) 9,19,019 (g) 14,031 (h) 8,01,301
6. (a) Seventy five thousand eight hundred thirty one. (b) Three lakh sixty five thousand one hundred eighty six. (c) One lakh three hundred one. (d) Ninety five thousand. (e) Three lakh eight thousand seven hundred fifty one. (f) Seven lakh seven thousand seven hundred seven. (g) Six lakh sixty thousand six hundred sixty. (h) Forty thousand four.

Worksheet 6

1. (a) $\boxed{7}$ ten thousands + $\boxed{5}$ thousands + $\boxed{1}$ hundreds + $\boxed{6}$ tens + $\boxed{2}$ ones
- (b) $\boxed{3} \times 10000 + \boxed{1} \times 1000 + \boxed{9} \times 100 + \boxed{2} \times 10 + \boxed{7} \times 1$
- (c) $\boxed{4}$ lakhs + $\boxed{8}$ ten thousands + $\boxed{6}$ thousands + $\boxed{2}$ hundreds + $\boxed{9}$ tens + $\boxed{3}$ ones.
- (d) $\boxed{3,00,000} + 0 + \boxed{1,000} + 700 + \boxed{80} + 3$
- (e) $50,000 + \boxed{900} + \boxed{8}$

2. (a) (1) 9 ten thousands + 1 thousands + 4 hundreds + 0 tens + 9 ones
 (2) $9 \times 10,000 + 1 \times 1,000 + 4 \times 100 + 0 \times 10 + 9 \times 1$
 (3) $90,000 + 1,000 + 400 + 0 + 9$
- (b) (1) 1 lakh + 1 ten thousands + 3 thousands + 6 hundreds + 2 tens + 5 ones
 (2) $1 \times 1,00,000 + 1 \times 10,000 + 3 \times 1,000 + 6 \times 100 + 2 \times 10 + 5 \times 1$
 (3) $1,00,000 + 10,000 + 3,000 + 600 + 20 + 5$
- (c) (1) 8 lakhs + 2 ten thousands + 4 thousands + 3 hundreds + 0 tens + 7 ones
 (2) $8 \times 1,00,000 + 2 \times 10,000 + 4 \times 1,000 + 3 \times 100 + 0 \times 10 + 7 \times 1$
 (3) $8,00,000 + 20,000 + 4,000 + 300 + 0 + 7$
- (d) (1) 9 ten thousands + 8 thousands + 4 hundreds + 6 tens + 1 ones
 (2) $9 \times 10,000 + 8 \times 1,000 + 4 \times 100 + 6 \times 10 + 1 \times 1$
 (3) $90,000 + 8,000 + 400 + 60 + 1$
- (e) (1) 3 lakhs + 1 ten thousands + 0 thousands + 0 hundreds + 0 tens + 8 ones
 (2) $3 \times 1,00,000 + 1 \times 10,000 + 0 \times 1,000 + 0 \times 100 + 0 \times 10 + 8 \times 1$
 (3) $3,00,000 + 10,000 + 0 + 0 + 0 + 8$
- (f) (1) 4 lakhs + 4 ten thousands + 4 thousands + 4 hundreds + 4 tens + 4 ones
 (2) $4 \times 1,00,000 + 4 \times 10,000 + 4 \times 1,000 + 4 \times 100 + 4 \times 10 + 4 \times 1$
 (3) $4,00,000 + 40,000 + 4,000 + 400 + 40 + 4$
- (g) (1) 8 lakhs + 0 ten thousands + 0 thousands + 1 hundreds + 3 tens + 4 ones
 (2) $8 \times 1,00,000 + 0 \times 10,000 + 0 \times 1,000 + 1 \times 100 + 3 \times 10 + 4 \times 1$
 (3) $8,00,000 + 0 + 0 + 100 + 30 + 4$
- (h) (1) 9 lakhs + 0 ten thousands + 0 thousands + 0 hundreds + 0 tens + 9 ones
 (2) $9 \times 1,00,000 + 0 \times 10,000 + 0 \times 1,000 + 0 \times 100 + 0 \times 10 + 9 \times 1$
 (3) $9,00,000 + 0 + 0 + 0 + 0 + 9$
3. (b) 68,654 (c) 1,11,111 (d) 90,705 (e) 6,05,410 (f) 4,30,027 (g) 80,308 (h) 7,10,006

Worksheet 7

1. (a) $<$ (b) $<$ (c) $<$ (d) $<$ (e) $=$ (f) $<$ (g) $>$ (h) $<$ (i) $>$ (j) $<$
2. (a) 68,943 (b) 1,10,001 (c) 9,43,962
3. (a) 5,005; 50,050; 50,500; 55,000 (b) 17,309; 17,903; 71,309; 71,903
 (c) 43,865; 4,38,546; 4,38,654; 4,83,654 (d) 20,002; 22,020; 2,02,202; 2,20,222
4. (a) 11,100; 11,001; 10,001; 1,110 (b) 83,648; 83,458, 83,456; 38,456
 (c) 3,94,090; 3,49,990; 34,990; 34,909 (d) 7,70,777; 7,07,077; 70,707; 70,070

Brain Teasers

1. (a) ii (b) i (c) iv (d) ii (e) ii
2. Ones, Thousands, Lakhs; Ones \rightarrow Ones, Tens, Hundreds; Thousands \rightarrow Thousands, Ten Thousands; Lakhs \rightarrow Lakhs

3. Greatest numeral = 99,950; Smallest numeral = 509
4. (a) 10,000 (b) (i) 100 (ii) 1 (c) 89,999 (d) thousands (e) (i) > (ii) > 1,00,001
5. 1,00,001
6. Smallest 6-digit numeral
7. (a) 5023 (b) 685 (c) 70,777
8. (a) Ones, Hundreds (b) Ones, Tens (c) Thousands, Ten Thousands (d) Lakhs, Lakhs (e) Ones, Ones
9. 3,000 > 30
10. 95,430; 30,459

UNIT-2 – ADDITION AND SUBTRACTION

Review Exercise

1. (a) 6,050 (b) 2,179 (c) 7,987 (d) 2,680 (e) 9,108 (f) 7,397
2. (a) 4,440 (b) 6,228 (c) 1,452 (d) 4,999 (e) 3,143 (f) 1,779

Worksheet 1

1. (a) 65,949 (b) 99,766
2. (a) 79,091 (b) 56,997 (c) 99,024 (d) 98,059 (e) 58,110 (f) 84,105
3. (a) 5,18,840 (b) 9,67,227 (c) 6,55,971 (d) 4,93,332 (e) 1,13,161 (f) 5,15,017
4. Largest number = 9,999; Smallest number = 10,000; Sum = 19,999

Worksheet 2

1. (a) 75,361 (b) 15,911 (c) 123 (d) 11,333 (e) 15; 76 (f) 617; 62 (g) 75,312 (h) 9,21,216 (i) 5,79,301 (j) 0 (k) 0

Worksheet 3

1. (a) 90 (b) 70 (c) 90 (d) 80 (e) 90 (f) 900 (g) 1,400 (h) 800 (i) 700 (j) 800 (k) 5,000 (l) 18,000 (m) 29,000 (n) 60,000

Worksheet 4

1. (a) 86,737 candidates (b) 52,705 books (c) 5,367 students (d) ₹ 20,190 (e) ₹ 6,68,675

Worksheet 5

1. (a) 6,892 (b) 725 (c) 8,274 (d) 828 (e) 7,850 (f) 26,088
2. (a) 5,25,919 (b) 4,47,764 (c) 7,92,970 (d) 2,41,702 (e) 9,13,709 (f) 9,21,782
3. (a) 8,096 (b) 2,471 (c) 769 (d) 1,00,001 (e) 4,41,729 (f) 1,12,133
4. Largest number = 99,999; Smallest number = 100; Difference = 99,899

Worksheet 6

1. (a) 16 (b) 78 (c) 0 (d) 0 (e) 732 (f) 1,689 (g) 0 (h) 6,955 (i) 0 (j) 0

Worksheet 7

1. (a) 40 (b) 70 (c) 10 (d) 50 (e) 200 (f) 400 (g) 500 (h) 5,000 (i) 3,000 (j) 2,000 (k) 10,000 (l) 41,000 (m) 90,000 (n) 5,000

Worksheet 8

1. (a) Adjoining nursery has more plant and by 2,687 (b) 2,77,720 females (c) 1,744 (d) 3,50,180

Value Based Question

1. ₹ 2,325 2. ₹ 325

Brain Teasers (Addition and Subtraction)

1. (a) ii (b) iii (c) i (d) iv (e) ii
2. (a) 1,64,770 (b) 58,124 (c) 7,05,135 (d) 101
3. Largest number = 9,876; Smallest number = 1,023; Sum = 10,899

4.

4	9	2
3	5	7
8	1	6

 5. 68,400 6. 51,503

7. (a) 0 (b) 96; 71 (c) 1,245 (d) 12,345 (e) 785 (f) 3,000 (g) 10,000 (h) 10,000

UNIT-3 – MULTIPLICATION

Review Exercise

1. (a) 988 (b) 13,300 (c) 5,461 (d) 10,143
2. (a) 124 (b) 505 (c) 2,058 (d) 8,946
3. (a) 2,139 (b) 2,100 (c) 2,200 (d) 9,453

Worksheet 1

1. (a) 39,625 (b) 2,16,756 (c) 1,18,908 (d) 2,02,027 (e) 1,01,655 (f) 2,24,417
2. (a) 3,10,751 (b) 5,09,841 (c) 3,30,480 (d) 1,84,875 (e) 3,02,152 (f) 9,87,120
3. (a) 92,207 (b) 1,54,721 (c) 1,30,606 (d) 91,080 (e) 4,48,588 (f) 9,17,301
4. Smallest number = 135; Largest number = 531; Product = 71,685

Worksheet 2

1. (a) 224 (b) 876 (c) 925 (d) 127 (e) 713; 615 (f) 7,256 (g) 276 (h) 1 (i) 344 (j) 56; 11 (k) 0 (l) 0 (m)

Worksheet 3

1. (a) 4,400 (b) 96,000 (c) 18,000 (d) 360 (e) 2,800 (f) 4,500 (g) 72,000 (h) 6,200 (i) 12,600 (j) 96,000 (k) 10,000 (l) 280 (m) 28,000 (n) 720 (o) 56,000 (p) 4,59,000
2. (a) 75,000 (b) 100 (c) 68 (d) 1,000

Worksheet 4

1. (a) 1,82,750 toffees (b) 3,600 litres (c) 39,746 beads (d) ₹ 25,920 (e) 75,000 pages

Value Based Question

1. ₹ 31,325

UNIT-4 – DIVISION

Review Exercise

1. (a) Q = 21; R = 0 (b) Q = 109; R = 3 (c) Q = 78; R = 6 (d) Q = 58; R = 1 (e) Q = 72; R = 0 (f) Q = 108; R = 0 (g) Q = 19; R = 4 (h) Q = 56; R = 2 (i) Q = 91; R = 6
2. (a) 3 (b) 7 (c) 7 (d) 7 (e) 4 (f) 6
3. (a) 17 (b) 0 (c) 1 (d) 1 (e) 0 (f) 18

Worksheet 1

- (a) $Q = 12$; $R = 2$ (b) $Q = 9$; $R = 6$ (c) $Q = 72$; $R = 5$ (d) $Q = 78$; $R = 1$ (e) $Q = 91$; $R = 8$
(f) $Q = 22$; $R = 0$
- (a) 52 (b) 35 (c) 64 (d) 0 (e) 3

Worksheet 2

- (a) $Q = 1,505$; $R = 0$ (b) $Q = 2,074$; $R = 0$ (c) $Q = 703$; $R = 5$ (d) $Q = 928$; $R = 2$ (e) $Q = 615$; $R = 4$
(f) $Q = 503$; $R = 1$
- (a) $Q = 3,676$; $R = 0$ (b) $Q = 720$; $R = 5$ (c) $Q = 1,463$; $R = 1$ (d) $Q = 527$; $R = 1$ (e) $Q = 1,568$; $R = 3$
(f) $Q = 342$; $R = 0$

Worksheet 3

- (a) $Q = 725$; $R = 7$ (b) $Q = 523$; $R = 11$ (c) $Q = 250$; $R = 8$ (d) $Q = 265$; $R = 21$ (e) $Q = 30$; $R = 29$
(f) $Q = 79$; $R = 60$
- (a) $Q = 152$; $R = 2$ (b) $Q = 280$; $R = 10$ (c) $Q = 282$; $R = 1$ (d) $Q = 214$; $R = 41$ (e) $Q = 91$; $R = 10$
(f) $Q = 155$; $R = 53$

Worksheet 4

- (a) $Q = 4,859$; $R = 10$ (b) $Q = 7,585$; $R = 7$ (c) $Q = 2,278$; $R = 20$ (d) $Q = 1,207$; $R = 12$
(e) $Q = 607$; $R = 0$ (f) $Q = 1,689$; $R = 51$
- (a) $Q = 2,991$; $R = 14$ (b) $Q = 2,101$; $R = 0$ (c) $Q = 1,013$; $R = 1$ (d) $Q = 1,428$; $R = 40$
(e) $Q = 1,582$; $R = 41$ (f) $Q = 2,420$; $R = 3$

Worksheet 5

- (b) $Q = 21$; $R = 3$ (c) $Q = 1,982$; $R = 7$ (d) $Q = 43$; $R = 24$ (e) $Q = 982$; $R = 76$ (f) $Q = 627$; $R = 31$
(g) $Q = 47$; $R = 321$ (h) $Q = 9$; $R = 827$ (i) $Q = 62$; $R = 578$ (j) $Q = 12$; $R = 345$ (k) $Q = 9,827$; $R = 1$
(l) $Q = 732$; $R = 19$

Worksheet 6

- (a) ₹ 1,525 (b) 46 students (c) 125 days (d) 476 candles (e) 135 (f) 98 shelves (g) 5 m

Value Based Question

- ₹ 105

Brain Teasers (Multiplication and Division)

- (a) ii (b) ii (c) iii (d) iv (e) iv
- (a) 6,99,066 (b) 1,18,896 (c) $Q = 160$; $R = 12$ (d) $Q = 991$; $R = 0$

- (a)
- (b) 18
- (c) 600
- (d)

$$\begin{array}{r} 1829 \\ \times 318 \\ \hline 14632 \\ + 18290 \\ + 548700 \\ \hline 541622 \end{array}$$

$$\begin{array}{r} 2198 \\ \times 125 \\ \hline 10990 \\ + 43960 \\ + 219800 \\ \hline 274750 \end{array}$$

- (a) $Q = 166$; $R = 8$ (b) $Q = 170$; $R = 32$ 5. (a) 4,320 (b) 3,780 6. ₹ 2,61,250
- (a) 40 (b) 89,210 (c) 5; 515 (d) 800 (e) 1 (f) 0 (g) 35 (h) 7; 542

UNIT-5 – LENGTH

Review Exercise

1. Ribbon, Cloth, Elastic, Rope, Wire (any other thing may also be taken)
3. (a) m (b) cm (c) km (d) m (e) km (f) km

Worksheet 1

1. (a) 400 (b) 800 (c) 10,000 (d) 63,000
2. (a) 340 cm (b) 1,975 cm (c) 803 cm (d) 3,405 cm (e) 1,730 cm (f) 5,005 cm
3. (a) 4,315 m (b) 7,125 m (c) 25,500 m (d) 19,005 m (e) 1,52,035 m (f) 4,008 m
4. (a) False (b) True (c) False (d) True (e) True (f) True

Worksheet 2

1. (a) 7 m (b) 35 m (c) 7 m 50 cm (d) 44 m 44 cm (e) 6 m 25 cm (f) 3 m 1 cm (g) 52 m 60 cm (h) 30 m 8 cm
2. (a) 9 km (b) 35 km (c) 2 km 250 m (d) 3 km 9 m (e) 29 km 56 m (f) 5 km 65 m (g) 15 km 623 m (h) 50 km 5 m

Worksheet 3

1. (a) 11 m 98 cm (b) 36 m 48 cm (c) 89 m 24 cm (d) 16 km 998 m (e) 116 km 400 m (f) 103 km 893 m
2. (a) 3 m 22 cm (b) 54 m 33 cm (c) 5 m 81 cm (d) 4 m 91 cm (e) 1 km 750 m (f) 10 km 911 m

Worksheet 4

1. (a) 5 m 95 cm (b) 29 km 200 m (c) 7 m 85 cm (d) Ram is taller by 47 cm (e) 4 m 75 cm

Value Based Question

1. 10 km 450 m

UNIT-6 – WEIGHT

Review Exercise

1. Vegetables, Fruits, Pulses, Gold, Iron (any other thing may also be taken)
2. (a) g (b) kg (c) g (d) kg (e) g (f) kg

Worksheet 1

1. (a) 4,000 (b) 13,000 (c) 10,000 (d) 1,000 (e) 29,000 (f) 3,00,000
2. (a) 7,570 g (b) 11,910 g (c) 23,056 g (d) 74,003 g (e) 1,05,075 g (f) 10,010 g (g) 3,29,923 g (h) 1,00,005 g (i) 3,015 g (j) 24,095 g
3. (a) True (b) False (c) False (d) False (e) False

Worksheet 2

1. (a) 2 kg (b) 8 kg (c) 5 kg 620 g (d) 6 kg 5 g (e) 9 kg 206 g (f) 11 kg 35 g (g) 10 kg 1 g (h) 72 kg 565 g

Worksheet 3

1. (a) 16 kg 739 g (b) 50 kg 933 g (c) 94 kg 157 g (d) 66 kg 980 g (e) 14 kg 221 g (f) 144 kg 586 g
2. (a) 5 kg 313 g (b) 18 kg 201 g (c) 16 kg 236 g (d) 2 kg 739 g (e) 20 kg 811 g (f) 39 kg 800 g

Worksheet 4

- (a) 14 kg 200 g tomatoes (b) 105 kg 50 g flour (c) 170 kg 625 g wheat
(d) Weight of first watermelon by 405 g

UNIT-7 – CAPACITY

Review Exercise

- Oil, Milk, Petrol, Juice, Ink (any other thing may also be taken)
- (a) ml (b) l (c) l or ml (d) ml (e) l (f) ml (g) l (h) ml

Worksheet 1

- (a) 7,000 ml (b) 2,00,000 ml (c) 92,000 ml (d) 8,750 ml (e) 11,925 ml (f) 23,065 ml (g) 2,15,015 ml
(h) 10,010 ml (i) 2,52,525 ml
- (a) True (b) False (c) False (d) False

Worksheet 2

- (a) 9 l (b) 74 l (c) 7 l 530 ml (d) 8 l 8 ml (e) 6 l 902 ml (f) 14 l 98 ml (g) 10 l 1 ml (h) 91 l 313 ml

Worksheet 3

- (a) 10 l 999 ml (b) 44 l 820 ml (c) 144 l 157 ml (d) 40 l 980 ml (e) 76 l 221 ml (f) 144 l 586 ml
- (a) 3 l 313 ml (b) 36 l 201 ml (c) 10 l 236 ml (d) 2 l 739 ml (e) 41 l 800 ml (f) 20 l 811 ml

Worksheet 4

- (a) 160 l 970 ml (b) 16 l 745 ml (c) 9 l 755 ml (d) 16 l 61 ml (e) Ramu's bucket, 895 ml

Value Based Question

- 1799 l 500 ml

Brain Teasers (Length, Weight, Capacity)

- (a) iii (b) ii (c) iii (d) iii (e) i
- (a) km (b) g (c) ml (d) m, cm
- (a) 7000 (b) 1000 (c) 72000 (d) 2005 (e) 303 (f) 9352 (g) 7 l 50 ml (h) 3 m 25 cm (i) 1 kg 575 g (j) 7000 m
- (a) 21 kg 615 g (b) 37 m 67 cm
- (a) 17 kg 714 g (b) 4 l 186 ml 6. 13 kg 850 g 7. 51 m 50 cm 8. 600 g, 400 g

UNIT-8 – TIME AND CALENDAR

Review Exercise

- (a) 25 minutes (b) 50 minutes (c) 10 minutes (d) 30 minutes (e) 20 minutes (f) 35 minutes
- (a) 2:35 (b) 4:05 (c) 12:40 (d) 6:30
- (a) a.m. (b) p.m. (c) p.m. (d) a.m. (e) p.m. (f) a.m. (g) a.m.
- (a) p.m. (b) p.m. (c) a.m. (d) p.m.
- (a) 31 (b) 30 (c) 31 (d) 31 (e) 30
- (a) 24 (b) 60 (c) 2 (d) 31 (e) May (f) 4

Worksheet 1

1. (a), (c) 2. (a) No (c) 366 days (d) 29 days

Worksheet 2

1. (a) Seconds hand, Minute hand, Hour hand (b) Seconds hand (c) Hour hand (d) Second
(e) 72 hours (f) 3600 (g) 400 (h) 20 (i) 36

Worksheet 3

1. (a) 5 hrs 35 min (b) 9 hrs 50 min (c) 11 hrs (d) 16 hrs 39 min (e) 9 hrs 40 min (f) 11 hrs 10 min
2. (a) 5:30 a.m. (b) 12:10 p.m. (c) 4:35 a.m. (d) 11:55 a.m.

Worksheet 4

1. (a) 1 hr 20 min (b) 2 hrs 5 min (c) 2 hrs 40 min (d) 1 hr 35 min
2. (a) 1:30 a.m. (b) 3:10 a.m. (c) 9:05 p.m. (d) 3:20 p.m.

Worksheet 5

1. (a) 10:50 p.m. (b) 8:55 a.m. (c) 3 hrs 55 min (d) 1 hr 45 min (e) 9:15 a.m. (f) 35 min

Value Based Question

1. 5:45 p.m. 2. 30 minutes.

Brain Teasers




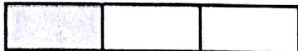


1. (a) ii (b) ii (c) iv (d) iii (e) ii
2. No 3. Sunday
4. (a) 366 (b) 3600 (c) February (d) 300 minutes (e) 215 minutes (f) 100 (g) 3 (h) 8 p.m. (i) 7 a.m.
(j) 5:50 a.m. (k) 6:35 a.m.
5. (a) 8 hrs 35 min (b) 7 hrs 32 min 6. (a) 1 hr 35 min (b) 2 hrs 52 min 7. 11 p.m.
8. 12 noon 9. 4 hrs 15 min 10. 7:05 p.m.

UNIT-9 – FRACTIONS

Review Exercise

1. (a) $\frac{5}{12}$ (b) $\frac{2}{6}$ (c) $\frac{9}{12}$
4. (a) < (b) = (c) > (d) =
3. (a) $\frac{5}{8}$ (b) $\frac{3}{17}$ (c) 10 (d) 1
5. (a) $\frac{5}{9}$ (b) $\frac{10}{11}$ (c) $\frac{5}{8}$ (d) $\frac{4}{17}$ (e) $\frac{8}{10}$ (f) $\frac{12}{13}$

Worksheet 1

1. (a)  (c) 
(b) 
2. (a)  (b) 
(c) 

Worksheet 2

1. (a) $\frac{2}{4}$, $\frac{6}{12}$, $\frac{3}{6}$ (b) $\frac{4}{6}$, $\frac{8}{12}$, $\frac{10}{15}$ (c) $\frac{2}{8}$, $\frac{3}{12}$, $\frac{5}{20}$ (d) $\frac{10}{14}$, $\frac{55}{77}$, $\frac{20}{28}$
2. (a) ✓ (b) × (c) × (d) ✓ (e) × (f) ✓

3. (a) $\frac{4}{12}, \frac{5}{15}, \frac{6}{18}, \frac{7}{21}$ (b) $\frac{8}{20}, \frac{10}{25}, \frac{12}{30}, \frac{14}{35}$ (c) $\frac{24}{40}, \frac{30}{50}, \frac{36}{60}, \frac{42}{70}$ (d) $\frac{12}{36}, \frac{15}{45}, \frac{18}{54}, \frac{21}{63}$
4. (a) $\frac{2}{14}, \frac{3}{21}, \frac{4}{28}$ (b) $\frac{10}{16}, \frac{15}{24}, \frac{20}{32}$ (c) $\frac{18}{22}, \frac{27}{33}, \frac{36}{44}$
- (d) $\frac{20}{26}, \frac{30}{39}, \frac{40}{52}$ (e) $\frac{16}{30}, \frac{24}{45}, \frac{32}{60}$ (f) $\frac{2}{50}, \frac{3}{75}, \frac{4}{100}$

Worksheet 3

1. (a) 2 (b) 12 (c) 54 (d) 40 (e) 60 (f) 10 (g) 5 (h) 4 2. (a) $\frac{5}{15}$ (b) $\frac{6}{18}$ (c) $\frac{11}{33}$ 3. $\frac{30}{54}$ 4. $\frac{5}{7}$

Worksheet 4

1. (a) Yes (b) No (c) Yes (d) Yes (e) No (f) Yes (g) Yes (h) No (i) Yes
2. (a) True (b) False (c) True (d) True (e) True (f) False

Worksheet 5

1. (a) \times (b) \checkmark (c) \times
2. $\frac{8}{11}, \frac{7}{8}, \frac{9}{10}, \frac{12}{15}$ 3. $\frac{11}{7}, \frac{35}{25}, \frac{81}{72}, \frac{15}{12}$ 4. $\frac{1}{8}, \frac{1}{9}, \frac{1}{11}, \frac{1}{36}$
5. (a) proper (b) greater (c) unit (d) one (e) mixed (f) greater (g) less
6. (a), (c), (e) 7. (a), (c), (d), (g), (h)

Worksheet 6

1. (a) $15 \div 3$ (b) $5 \div 2$ (c) $13 \div 6$ (d) $23 \div 18$ (e) $7 \div 6$ (f) $0 \div 5$
2. (a) $\frac{9}{5}$ (b) $\frac{15}{4}$ (c) $\frac{21}{7}$ (d) $\frac{25}{12}$ (e) $\frac{7}{3}$ (f) $\frac{35}{15}$

Worksheet 7

1. (a) $1\frac{1}{3}$ (b) $4\frac{1}{10}$ (c) $2\frac{3}{4}$ (d) $4\frac{5}{6}$ (e) $1\frac{2}{5}$ (f) $5\frac{5}{9}$ (g) $6\frac{2}{11}$ (h) $4\frac{14}{15}$ (i) $7\frac{5}{7}$
2. (a) $\frac{7}{3}$ (b) $\frac{25}{4}$ (c) $\frac{13}{9}$ (d) $\frac{100}{3}$ (e) $\frac{101}{10}$ (f) $\frac{47}{6}$ (g) $\frac{87}{7}$ (h) $\frac{82}{9}$ (i) $\frac{39}{8}$

Brain Teasers

1. (a) i (b) iii (c) ii (d) ii (e) iii
2. (a) proper (b) mixed (c) improper (d) unit (e) like
3. (a) $\frac{8}{24}, \frac{10}{30}, \frac{12}{36}$ (b) $\frac{4}{32}, \frac{5}{40}, \frac{6}{48}$ 4. (a) 64 (b) 60 (c) 6 (d) 3
5. (a) $\frac{1}{256}, \frac{1}{1024}$ (b) $\frac{16}{81}, \frac{32}{243}$

UNIT-10 – ANGLES

Review Exercise

1. (a) Ray (b) Line segment (c) Line (d) Ray (e) Line segment (f) Line
2. (a) 5 (b) 6 (c) 12 (d) 7
3.
 - A line segment has two end points
 - \rightarrow represents a ray
 - A ray has one end point
 - A line segment is a part of a line
 - A line has no end points
 - A line segment can be measured

Worksheet 1

1. (b), (c), (g)

Worksheet 2

1. (b) $\angle PQR$ (c) $\angle ABC$ (d) $\angle XYZ$ (e) $\angle DEF$
2. (b) M , \overline{ML} and \overline{MN} (c) E , \overline{ED} and \overline{EF} (d) B , \overline{BA} and \overline{BC} (e) Q , \overline{QP} and \overline{QR}
4. (a) 4 (b) 3 (c) 5

Worksheet 4

1. (a) Acute angle (b) Acute angle (c) Obtuse angle (d) Acute angle (e) Right angle
(f) Obtuse angle (g) Obtuse angle (h) Straight angle

Brain Teasers

1. (a) ii (b) ii (c) i (d) ii (e) iii
2. (a) one, two (b) acute (c) 90 (d) 4 (e) 3 (f) straight
4. (a) 5 (b) 8 7. (a) 1 (b) 2 (c) 1 (d) No (e) 90 8. (a) 3, 2, 0 (b) 0, 0, 3 (c) 1, 2, 0
9. 3 O'clock or 9 O'clock 10. $\angle AOB$, $\angle BOC$, $\angle AOC$ 11. (a) $<$ (b) $<$ (c) $=$

UNIT-11 – PERIMETER

Worksheet 1

1. (b), (c), (e), (g) 2. (b), (d), (e), (h)

Worksheet 2

2. (a) 14 cm (b) 15 cm (c) 16 cm (d) 14 cm

Worksheet 3

1. (a) 40 cm (b) (i) 24 cm (ii) 44 cm (iii) 104 cm (c) 24 cm (d) 110 m (e) 102 cm (f) 48 cm
(g) 408 m (h) Meena covered more distance by 4 m

Brain Teasers

1. (a) iv (b) ii (c) ii (d) ii (e) iii
2. (a) 22 cm (b) 20 cm (c) 11 cm (d) 15 cm 3. 22 m 4. ₹ 1,125 5. 18 cm 6. 10 cm

UNIT-12 – AREA

Worksheet 2

1. (a) 4 squares (b) 5 squares (c) 13 squares (d) 5 squares (e) 4 squares (f) 7 squares (g) 4 squares (h) 8 squares (i) 5 squares

Worksheet 3

1. (a) square (b) area (c) Breadth (d) Side \times Side (e) 1 sq. cm
2. (a) 24 sq. cm (b) 108 sq. cm (c) 384 sq. m (d) 7500 sq. cm
3. (a) 36 sq. cm (b) 121 sq. cm 4. 10 sq. m 5. 484 sq. cm 6. 60 sq. m

Value Based Question

1. 900 sq. m.

Brain Teasers

1. (a) iv (b) ii (c) ii (d) i (e) iv
2. (a) Inland letter (b) Blackboard (c) 100 rupee note (d) Bedsheet
3. (a) 11 squares (b) 4 squares (c) 12 squares 4. 30 sq. m 5. 25 sq. m 6. ₹ 2,700

UNIT-13 – VOLUME

Worksheet 1

1. (a) Cricket ball (b) Watermelon (c) 1 / polypack of milk 2. (a) ii (b) i (c) i
3. (a) False (b) False (c) True

Worksheet 2

1. (a) 2 cubes (b) 6 cubes (c) 18 cubes (d) 45 cubes 2. (c)

Worksheet 3

1. (a) Volume (b) Breadth \times Height (c) Edge \times Edge (d) Volume (e) 1 cu. mm (f) 8 cu. cm
2. (a) 64 cu. cm (b) 1728 cu. cm (c) 3375 cu. cm (d) 2197 cu. cm
3. (a) 600 cu. cm (b) 30 cu. cm (c) 150 cu. cm (d) 2856 cu. cm
4. 4800 cu. cm 5. 64 cu. cm 6. 972 cu. cm

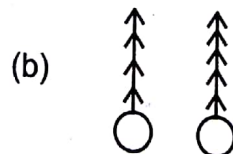
Brain Teasers

1. (a) iii (b) iv (c) ii (d) i (e) iii
3. 135 cu. cm 4. 512 cu. m 5. Cube of edge 6 cm 6. 108 cu. cm

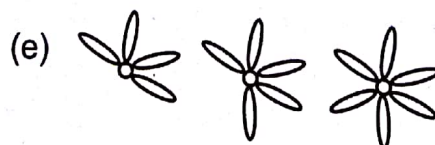
UNIT-14 – FUN WITH PATTERNS

Worksheet 1

1. (a) 



(d) A A A B B

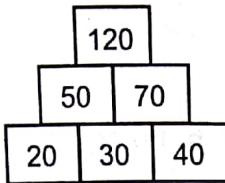


Worksheet 2

- (a) 72, 77, 82, 87 (b) 9, 11, 13, 15 (c) 18, 15, 12, 9 (d) 60, 50, 40, 30
 (e) 21, 31, 43, 57 (f) 55, 66, 77, 88 (g) 64, 128, 256, 512 (h) 107, 109, 111, 113
 (i) 309, 409, 509, 609 (j) 886, 986, 1086, 1186

Worksheet 3

1. (a)



(b)

